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THE ARAB HORSE.

BY CAPTAIN A. M. GRAHAM, Q. M. CORPS, (CAVALRY).

AS a preliminary I wish to state that this is not intended as an educational article, nor is it claimed that all statements there are not opened to argument. It is merely an expression of my own opinion regarding the most desirable, to my mind, class of horses in existence, the Arab.

When Colonel Frank Tompkins, then Major Thirteenth Cavalry, went into Mexico, he rode Kingfisher, a seven-eighths Arab, one-eighth pure bred, stallion. His striker rode Colonel Tompkin's second horse which was about three-quarters bred American horse. Kingfisher stands about fourteen and one-half hands, weighs about 925 pounds. These figures are estimated. Colonel Tompkins weighs about 165 pounds.

The trip taken by Colonel Tompkins in Mexico was one of the two very long continuous trips made by the American cavalry under General Pershing, and was made on very short rations for both man and beast.

Most of the officers on the expedition had two horses, and favored the best one in every possible way consistent with the nature of the trip; walking and leading whenever possible, resting him and riding the second mount, *rustling* a little extra feed, etc.

Colonel Tompkins was making a real test of Kingfisher and did not favor him in any way. He rode him every day of the trip, all day.

When the rest of us saw with apprehension that our favorite mount was daily getting a little thinner, a little duller, and a little weaker, there was practically no change in Kingfisher. He possibly lost fifty pounds in weight on the trip, but otherwise, he was the same old Kingfisher. He looked just as thrifty and healthy as when he started out from Columbus, New Mexico.

Our prize mounts without exception, showed strong signs of the wear and tear of the expedition, but not Kingfisher. When I speak of our *prize mounts* I mean exactly what I say, for several of the animals on this expedition were magnificent animals, and when cared for as they are accustomed to be cared for, and used for the purposes for which they are fitted, would be very hard ones to beat. Nearly without exception, they were fine specimens of the pure bred horse or at least seven-eights pure bred.

When the Howze column joined the commands of Colonel W. C. Brown, Colonel H. C. Allen, and Major Frank Tompkins at Santa Cruz de Villegas, Mexico, I think it was April 13, 1916, I had an opportunity to look over the horses of all of these commands. I did not see an animal in any of the outfits, although half of them had not gone through nearly as much hardships and hard *hikes* as Kingfisher, that had nearly the normal appearance that he had, or that really looked perfectly *fit* as he certainly did. I repeat, that with the possible difference of fifty pounds in weight, he looked and acted exactly the same as he did before and after the expedition. While every other horse that I saw there looked rough and *gaunt*, I could see no difference in Kingfisher.

I made inquires as to how much of the time Kingfisher had been led on the trip, and also as to whether he had been favored with extra feed when forage was short, and found as follows:

Kingfisher had *been ridden* the entire trip, and not only that, but had repeatedly been given extra riding here and there away

from the column. Kingfisher had received just the same amount of feed as the other horses.

I asked the scouts with Colonel Tompkins, the Surgeon, and also his striker, many questions regarding Kingfisher, and all were absolutely and unreservedly enthusiastic over him. They said he ate less and drank less than an ordinary horse, and kept in far better condition than other horses that were doing the same work. When a Western cowboy will acknowledge that there is any horse living that can beat the Western pony at his own game, it is indeed a very great concession, but this is exactly what our scouts did.

On several occasions I talked to different ones of the scouts that we had in Mexico about the Arab horse. These scouts were mostly fine types of well educated, scientific stock raisers, and without exception they gave the Arab horse the credit for the wonderful qualities that the better type of Mexican pony has. They told me that all of the big ranches in Mexico used their pure bred or part bred Arab stallions, if they could get them, to improve the strain of horses. I doubt if better native ponies were to be found anywhere than the Mexican pony before the revolution started about 1910.

For years our officers have conceded that the Western cow-horse was a marvel for his kind of work, and that his endurance was unbelievable. I think that it has been generally conceded that these same cow-ponies are direct descendants of the Arab horse, brought from Europe by the Spaniards many years ago. If these Western *Cayuses* that are Arabs *gone to seed* show such wonderful qualities why should we entirely overlook the possiblities of the Arab cross to obtain some of the wonderful qualities that we all acknowledge the Arab has?

The pure bred horse is undoubtedly a wonderful animal for the purpose for which it is bred, *i. e.*, speed. To be a real race horse, he must have dauntless courage and great power. In the old days of three and four mile races, these horses were entirely a different type of animal from the present day type of weedy animal that is good for nothing except one sprint, seldom more than one and one-eighth miles. His days work is then finished, and he is carefully rubbed down, cooled out and otherwise pampered until he has degenerated into a delicate speed machine

that knows nothing of rustling for himself, and standing hardships day after day. The old "four miler" was a horse with plenty of substance and bone, plump, full well muscled quarters, big chest, and well muscled forearm. He had endurance as well as speed. Even granting that he had the qualities outlined above, he had not been required to shift for himself, and had been born and raised to a life of care and comfort. The result of this is that when it comes to a "show down" on a long continued trip with very little to eat, bad weather, and very little care and attention he *isn't there.*

A large horse, as most pure breds are, is not fitted by nature for rough and mountainous traveling. He is generally rather high strung, and instead of picking his way through difficulties, tries to *bull* his way through, expending twice the amount of energy necessary. We are all on the lookout for a good *pony built thoroughbred* with substance, breeding and speed, but *there ain't no such animal.* On the very rare occasions that you *do* find one, and *price* him, the subject is changed very soon afterwards, as the price is absolutely prohibitive. Even at that he cannot go out on the desert and compete with the Western descendant of the Arab. He may go further in a day, but he will not in a month, because he makes twice the work of the same job as the small horse does, needs twice the feed, and does not know how to *rustle* for it.

The Arab horse is a distinct *type* and seldom departs from that type. I believe that the Arab breeds far *truer to type* than any other breed of horses in the world. If the average pure bred horse bred *true to type* it would be a misfortune for the Army, as very few are in any way the type desired. If one could get an average composite picture of twenty *thoroughbred* horses chosen at randum, would it show a good type of cavalry horse? I do not believe it would. On the other hand, I believe such a picture of Arab horses would show an ideal type for cavalry, and I doubt if any of the twenty would depart very far from the composite picture.

I am not posing as an authority on horses, I am merely stating a few of my own opinions, which are not copyrighted, but I have never yet heard an argument borne out by facts that convinced me that the Arab *type* was not the ideal type for

army use. Nor have I ever heard of an Arab that *fell down* when put to a test.

Since I was a boy my ideal horsedom has been the Arab. I have never owned one merely because the breed has been so neglected in the United States that they are very scarce and valuable, and pay day only comes around once a month, but that has not prevented me from wanting them. I believe that they have to a far greater extent than any other breed, all the qualifications that are required for cavalry horses. We copy many things from Europe that seems rather unimportant. Why not copy and profit by their experience with the Arab horse? The European governments are yearly spending millions of dollars raising Arab horses, and crossing them on other breeds, and I do not believe they would stick to it unless they liked the results.

Some of you that waste your time reading this article, probably do not agree with any part of it. That is as it should be. We are all entitled to our own opinions, and I am not trying to override yours, neither do I expect to have you convince me that I don't like an Arab horse above all others.

WHAT HORSE FOR THE CAVALRY?

By VARIOUS OFFICERS.

Colonel Clyde E. Hawkins, National Army:

FROM a practical point of view the type of horse for the cavalry depends upon what the country has to afford. In theory we might want a certain breed and a certain size of horse, but it is a well known fact, especially at the present time, in an emergency, we must use the horses produced in our own country.

Before the advent of the motor car, horses for saddle purposes were used in large numbers and bred for saddle purposes throughout the counry. Naturally they produced in many different sections of the United States a cons derable number of animals suitable for cavalry purposes. However, at the present time, on account of the wide use of the motor car and buggy, very few people ride for necessity. As a natural result horses are bred for the purposes demanded by the market. This means, first, heavy draft horses; second, medium draft horses; and third, driving horses. Saddle horses are still used in isolated places, especially in mountainous regions and by a few who ride for pleasure or are interested in polo or racing.

Thoroughbred Horses.—The tight made, big boned, well developed thoroughbred, such as was demanded by long hard flat races, steeple-chases and cross country riding, is undoubtedly the grandest horse extant today. On account of the gambling game, short races, and light weight carried the great majority of thoroughbreds throughout the country has greatly deteriorated into a horse totally unfitted for cavalry service. Consequently very few thoroughbreds of the first mentioned type can be obtained and therefore their use in the cavalry service in large numbers at the present time is out of the question. However, the best type of thoroughbred horse always makes a

high class officer's charger and cross country horse. They are hard to obtain and few in number. In my opinion the thoroughbred is too hot headed for use of the enlisted man and therefore should not be considered, even if obtainable, for the average enlisted man.

Standard Bred Horses.—This horse, when selected with proper type, tight made, good bone and well muscled throughout is a grand horse. He makes a first class cavalry mount. He usually develops good gaits at the walk, trot and gallop an invariably gives a good account of himself in every way demanded by the cavalry service.

The Saddle Bred Horse.—The saddle bred horse, in my opinion, is not adapted to the cavalry service for the following reasons:

First.—He is a gaited horse, which is undesirable for the cavalry mount.

Second.—He is usually high-headed and low in the back and does not gallop well and especially is a poor horse across country and over jumps.

It has been my experience that the gaited horse is the first to give out on long hard marches.

The Arab Horse.—This horse is small but when compact, tight made and well muscled, and if large enough to carry the weight, undoubtedly will make a very good cavalry mount. Of course it is well known that in this country there are not sufficient numbers of them to consider for any purpose in the present emergency. As a rule this horse is too small, but undoubtedly by proper crossing larger types would result and the horse improved for cavalry purposes.

Morgan Horses.—The so-called Morgan horse is almost extinct in the United States, but undoubtedly was a high class small horse, and if they could be obtained in sufficient numbers would make good cavalry mounts. However, they have never done anything which could not be equalled or excelled by the standard bred horse.

Cleveland Bays, The German Coach Horse, French Coach Horse and Various Other Types of Medium Draft.—Among this class many excellent horses may be found of proper type for a

large cavalry horse, but as a rule they will be found more suitable for field artillery.

Draft Type.—This type need not be considered except for use in field and heavy artillery. However, even in this type a few high class cavalry horses are sometimes found. Sometimes a Percheron mare is crossed with a thoroughbred stallion and a fine horse of large hunter type is produced.

In my opinion the whole subject can be summed up in a few words; a good horse is a good horse and a poor horse is a poor one. Both of these classes can be found in any breed and therefore to say that any one breed of horse is the only one, to my mind is ridiculous. In selecting horses suitable for cavalry mounts type, conformation, disposition and soundness are the principal things to be considered.

Proper Type of Cavalry Horse.—The cavalry horse should be well bred, tight made, well muscled, large barrelled, strong loins, well developed hips and thighs, fairly broad chested, medium withers, sloping shoulders, large bones, good feet of medium size, straight normal legs, well set and properly directed, sound in wind, limb and body, fine as opposed to draft or logy type, but far from delicate and weedy, of prompt action, gentle but with spirit and vigor as denoted by his mien. Large wide strong knees and hocks, lean in appearance, rather short wide cannon bones, with ligaments and tendons well outlined and well attached, are very important. The Median line of the front leg, as viewed from the side, should pass through the middle of the fore-arm, knee, cannon bone and fall at or near the heel. The Median line of the fore leg as viewed from the front, should bisect the leg and the hoof. The Pastern should be neither very long nor very short, but medium in length and have the same angle as the hoof of the foot in normal condition. The fore-arm and gaskin should be well muscled and well developed. The cannon bone of the hind leg in the normal horse with the best conformation is nearly straight or slightly inclined to the front. The legs, their condition as to soundness, and their direction, is of prime importance for a saddle and weight bearing animal because an animal with one defective foot or leg is not worth considering, even though he may be perfect in every other respect.

Size.—This is a difficult matter to definitely prescribe. The best in general is the medium, neither very small nor the very large, the same as in man. However, there are many exceptions to the rule. First class horses for cavalry service in every particular are found both below and above the medium, depending entirely upon the individual. If we were to say just what size of horse was best adapted for the cavalry service we would have to say about fifteen hands two inches, this being a medium of all considered. There is no doubt whatever in my mind but what many horses ranging in size from fourteen-three to sixteen-two are first class cavalry mounts in every respect and will do all the work required of them. In each case it depends absolutely upon the individual—his type, conformation, etc.

I am in favor of cavalry horses from fifteen hands to sixteen hands in heighth. The inspector to have authority to accept horses of excellent type, conformation and qualifications as low as fourteen-three and up to sixteen-one, depending entirely upon the individual animal presented. After much observation I believe the best horse for type, conformation, gait, disposition, etc., in the cavalry service, is the Grade Thoroughbred, that is a horse bred by a thoroughbred sire and a good mare (probably standard bred) thus giving what is usually known as a "Half Thoroughbred."

Personally I have had very little experience with the Arab type, but since he is the progenitor of the thoroughbred horse I believe the blood is correct, but that the size should be increased somewhat by cross breeding. The thoroughbred horse under arduous field conditions is satisfactory only when he conforms to the tight made, big boned, compact kind and of proper disposition. The average thoroughbred as produced in this country today is useless for the hard conditions of campaign.

Weight.—The weight of the cavalry horse depends to a certain extent upon the burden which he must carry. In general a horse should not be expected to carry more than one-fourth his own weight. The average cavalryman, saddle, arms and equipment complete for field service will weigh about 250 pounds. Therefore, a cavalry horse ought to weigh from 1,000 to 1,100 pounds. It is true, however, that there are small

horses having very good legs, conformation, strength and vigor of 900 pounds in weight that will carry the cavalry load, but an animal of this weight must be peculiarly fitted for the task. In my opinion the minimum weight for cavalry horses should be 950 pounds and the maximum about 1,150. Cavalry horses should average from 1,000 to 1,050 pounds in weight.

Bone.—The cavalry horse should be rugged and vigorous and have good bone. Among cross country and jumping horses that have stood this hard test for many years without breaking down the measurement of the cannon bone below the knee has invariably found to be eight inches or more in circumference and the girth measurement at least seventy inches, generally more; indicating a large barrel and great lung power. The minimum cannon bone for a weight carrying horse is seven and five-eighths inches. The minimum girth sixty-eight inches.

Small Horse.—Among small horses a few of excellent types, and conformation are found but the great majority are not worth considering for cavalry horses. The few of excellent type and conformation are very good and can do the work.

Large Horse.—A large loose jointed, more or less awkward long backed, heavy gaited driving type of horse is no good for any purpose.

Driving Type.—This is a horse very commonly found and frequently presented to inspectors for cavalry purposes. He is a narrow, long legged, long backed horse, generally thin necked, with high withers, cut up behind, lacking in barrel and type and muscular conformation that would even indicate weight carrying capacity. As a rule he has sufficient breeding, usually of the standard bred type, but is not compact nor tight made and is of a delicate appearance. It is only the compact tight made muscular horse that can carry weight and live on short rations.

Cow Pony.—The small cow pony, when he conforms to proper type and conformations, is undoubtedly an excellent cava ry horse. Like other small horses there is one good one to about three that are of no use.

As is well known the cow-boy, if he has any particular amount of riding to do, has a string of five or s x; he rides one generally beyond its endurance, which appears to be a remarkable ride, casting him aside and mounting another. It is in this

way, with the number of horses he uses, he can make a great showing at long distance riding. The principal asset of the cow pony, in his own country, especially in the South and Southwest, is the fact that he is thoroughly acclimated and accustomed to forage on anything he can pick up. The cavalry horse of the Middle West properly fed and nurtured to maturity and then acclimated will, in the same country, kill the cow pony. The whole point made here is that horses brought from the North and Central part of the United States to the South and Southwest where the climate, forage and conditions are entirely different must be acclimated before they can be expected to do proper work. To say that the little horse of the cow pony type is better than the larger horse, to my mind, is entirely erroneous.

During the recent expedition from Columbus, New Mexico, into Old Mexico many remounts from the Middle West were used. It has been reported that many of these animals were shipped to the Border and sent into Mexico while yet suffering from shipping fever and diseases resulting therefrom without ever having been quarantined or acclimatized in any way, shape or form.

Brigadier General Guy Carleton, National Army:

To begin, I am very sure that no officer who has had an opportunity to see and ride the thoroughbreds at Fort Riley will ever think of the thoroughbred as a "weedy, small-boned, contracted barrelled racer." It is unfortunate that the latter type of horse is in evidence in the army and has given the thoroughbred a bad name; it is still more unfortunate that Front Royal has produced a good sized crop of them.

As to the best type of horse for the cavalry to be obtained by scientific breeding I am convinced that we can get courage and endurance only from the thoroughbred. These two qualities are essential in the ideal cavalry horse as well as size and weight. I am one of those who have steadfastly maintained that in modern war the rifle and not the horse is the cavalry-

man's most important weapon, and that, therefore, it was wrong to train cavalry principally for the mounted charge, but I am just as convinced that good cavalry that is looking for it will find its opportunity on the field of battle not only for the charge against cavalry but, occasionally, where daring has won its greatest successes in the past, against infantry.

For the charge, and in a less degree perhaps for other work, we need in the horse courage, endurance, size and weight. I don't know where we can hope to get them except from thoroughbred blood.

Colonel T. Q. Donaldson, Inspector General:

I favor a horse from fifteen hands to fifteen hands two inches in height, with proportionate conformation, and, in exceptional cases, slightly under fifteen hands, my reason for this being, from my observation and experience, that a horse of this size of good conformation has more endurance, costs less to feed, and, in general, gives less trouble in the field than horses which are, on an average, taller than this.

I have had no practical experience with the Arab type, either as owner or observer, and all I know about a horse of this type has been gained from what I have read on the subject. From this reading, however, I formed the impression that some Arabs blood in our cavalry horses would be very desirable, for it appears that the Arab transmits to his descendants two qualities that are important in a cavalry horse, namely, endurance and courage.

I do not favor the cold-blooded horse, but I *do* favor the part thoroughbred, and I believe that the half-bred, or three-quarter-bred would give the best results, this, for the reason that the cold-blooded horse is sluggish, often vicious, lacks endurance and breaks down easily in the field, and the part thoroughbred, or half-bred, would not be subject to these defects.

I have never ridden a thoroughbred horse under field conditions, but I have been on long marches and in the field with officers who have ridden them, and my impression formed from observation of these animals was unfavorable. I believe them

to be unduly sensitive, that they require more care than can be given them, and that they are too nervous for officers' chargers. I noted, while reading the accounts of officer in "Battles and Leaders in the Civil War," that the majority of the Southern Officers who spoke of thoroughbreds, stated that they were not well suited as cavalry mounts for the reason that they were too high-strung, and could not be controlled in action.

Colonel Alonzo Gray, Sixth Cavalry:

Regarding the matter of the best type of cavalry mount, I think very few will disagree with Major Tompkins. While my personal experience is limited, I had a very excellent opportunity to observe both types of horses while on duty in the Inspectors Department. The thoroughbreds which I saw were mostly race horses bought off of the Juarez race track. They all ran up light in the barrel and were unsuitable for carrying weight.

In the early part of my service I encountered many horses in cavalry troops which were raised in the mountains of New Mexico and Arizona which gave splendid satisfaction as weight carriers and for endurance. My old horse "Stub" was of this type. He recently died at thirty-one years of age after I had owned him twenty-eight years.

This type of a horse was in size about the same as the Arab which Major Tompkins is devoted to, but not so finely turned. His ancestors were unknown and the type itself was collected from the thousands of horses running in the western country. The difference is that the Arab will breed the type while the others will not.

The proposition of the circular letter seems to present the question as to whether we will breed up from the Arab or down from the thoroughbred to get the desired type. It is more to the point to inquire as to who will do the breeding. The answer is that if it is done at all, it will be done by the army as a part of the preparedness scheme. Civilian breeders will certainly not touch the question.

I favor horses between fifteen hands and fifteen hands two inches in height, but I recognize the fact that there are many desirable horses both larger and smaller than this. The question is one of proportion accompanied by the necessary activity and endurance. Probably ninety per cent. of the desirable horses are between these limits. Above fifteen hands two inches such horses are very rare. Below fifteen hands are found many good horses, but few are capable of carrying a load of 250 pounds on a protracted campaign. Unless the Government undertakes the breeding of horses, I consider the question a purely academic one because, at the present time, we are forced to take what we can get.

Colonel E. W. Evans, Cavalry:

I favor a horse fifteen hands two inches or under. I had both these and the larger horses in my command in Mexico, and I think that the smaller horse was the more adapted to hard work on short feed.

I have observed the Arab horse owned by Major Tompkins both in the Post and in Mexico. He was for a time, kept on one of my picket lines immediately after his return from the South, and was then in fine condition.

I prefer not more than half-breed for the reason that while the breeding gives courage and nerve, the finer the breeding, the greater amount of care and feed is necessary to keep him in condition.

I rode a registered Kentucky Saddler for the first six weeks in Mexico. He was not sensitive, prone to disease nor injury, nor otherwise unsatisfactory, except in that by the end of that time, he was done for. I rode him every day and like everything else, with breeding, he stood up as long as he could. He worked for all there was in him and as long as he could, and then I had to stop using him. He will never be fit for field work again.

Lieutenant Colonel J. S. Fair, National Army:

The minimum height of the service horse for cavalry should be fifteen hands. There are more good horses between the heights of fifteen hands and fifteen hands three inches than any other size. There are a few good horses of the blocky type under fifteen hands. I have had an opportunity during the past year of observing more than 30,000 horses, many of them under fifteen hands in height. Not more than ten per cent. of the animals under fifteen hands had a suitable conformation to withstand field service. It is my opinion that we should permit buying of cavalry horses under fifteen hands; we could buy very few of the blocky type which alone are suitable for cavalry purposes.

I have had no experience with the Arab type, but my impression is that we are likely to overestimate the value of this type, because we have observed the work of a very few of them and these have been stallions.

I favor for the cavalry any animal that has the proper conformation, whether he has thoroughbred blood or not. One of the best horses I have ever seen is the half-thoroughbred, half-Morgan.

I have never ridden a thoroughbred horse under arduous field conditions, but I have observed many of these horses under such conditions, and believe that they require extraordinary care and attention to keep them in as serviceable shape as the ordinary horse.

Colonel J. C. Waterman, Cavalry:

I have had no experience with Arab horses; neither have I ridden a thoroughbred horse under field conditions, but have seen the latter under such conditions on the border, at Hachita, N. M. In my opinion he has not been satisfactory; the officer, for hard work, riding frequently, a troop horse as his was not in condition usually owing to legs or feet. He is sensitive, high strung, and needs more care and attention than can always be given him in the field. I entirely agree as far as my experience goes, with Major Tompkins on this point.

I doubt if the price of an Arab horse could be brought within the limits for a cavalry horse. I would like to see the strain, if practicable, bred into our cavalry mounts.

I prefer a part thoroughbred for cavalry service, a standard bred or half-bred, but not any half-bred, a type only in which the mare is selected for her intelligence, mildness, conformation and her gaits for cavalry. I ride such a one; he is showy, head up and has fine action and conformation; is even tempered, never frets, fearless, and takes a five foot hurdle with ease and comfort. I ride him on all government tests, practice and other marches, and my daily pleasure rides. A horse of this breeding is within the price, and I consider has the bone, the endurance, the barrel required by our distance-covering, weight-bearing cavalry.

I am of the opinion, from my observation of the hard and long distance border patrolling that the horse under, rather than over fifteen hands two inches, is the proper cavalry mount. The price of the larger horse is higher, he usually, in this country, owes his size to draft-blood rather than saddle breeding, he requires more food, he is more apt to be slow stepped and hard gaited, he pounds the road with his feet when it is necessary to take him over them. He is harder for our cavalrymen to groom, saddle and mount; and finally according to my experience, (his service is short-lived, he is rough gaited) he is soon on the inspection report. If bought young, he develops large feet, a large head or disproportionately otherwise. The less expensive, fifteen hands two inches or under, horse, with his light feet and nimble action and perfect conformation, more often found in this size of a horse, will, in my opinion, cover the distance, carry the load, to his own and his rider's comfort, and stand the privations of a forced march, better than his bigger brother.

Colonel F. R. McCoy, Cavalry.

I favor a service horse at least fifteen hands two inches in height, although I do not consider the height of especial importance as compared to the formation, stamina and quality.

I do not believe, however, that the average horse of less height that that is up to the weight carrying requirements of the service.

I have had no practical experience with the Arab type of horse. As an observer I am an admirer of the Arab having seen and ridden with several English cavalry regiments mounted on such horses, but they were extremely light cavalry, not carrying rifles, and there was a very decided difference of opinion among the officers of those regiments with regard to their comparative value as service horses. Their good qualities are well known the world over but no nation has ever been satisfied with them as service mounts. The last time I rode with one of these Arabs was in the Russian Cavalry test at Fort Winchester, Va., with Major Byrum riding an Arab horse which I think belonged to Colonel Tompkins. I rode beside him throughout the test and was interested in the horse's performance, which was good, but his barrel and conformation was such that the saddle blanket came from under the saddle and Major Byrum teetered throughout the course. It seemed to me at the time that the horse did not have the conformation for carrying the service saddle and equipment.

I favor as much thoroughbred blood as possible for cavalry service. I believe with proper breeding the thoroughbred would be the ideal horse for cavalry service, but I am conscious of the difficulties, and believe the Department is on the right lines in encouraging the breeding of half-blooded stock for the purpose. I have ridden a number of the Virginia half-bred horses and consider them first rate for cavalry service in every respect.

I have ridden thoroughbred horses ever since entering the service and for my own use much prefer them. During the past two years on the border I rode a thoroughbred mare in arduous field service, on the march, patrolling, at drill and for polo. She is even fifteen hands two inches, strong, not sensitive nor prone to disease or injury. In fact she has never been sick except for a slight case of influenza caught from remounts. She, in no ways answers any of Colonel Tompkins'

description of the thoroughbred, weighing 1,050 pounds, short coupled, big barrelled and as Lord Roberts said of his famous Arab, "never sick nor sorry."

Lieutenant Colonel Roger S. Fitch, Field Artillery, N. A.:

I am very much in favor of a service horse not more than fifteen hands two inches in height; horses over this height, and especially horses considerably over this height, usually run too much to legs, to lankiness, to being poor keepers and to having more joint and ligament trouble than is usually the case with smaller horses. A short-backed, short-coupled, strongly-muscled horse of fifteen hands two inches and under will usually carry a man infinitely farther on short rations than will the type of thoroughbred which of late years has become more or less of a fad in our service.

I have had no practical experience with the Arab type. While on duty at French maneuvers near Vesoul in 1911, I saw a good deal of the French light cavalry mounted on what they call the demi-sang type of horse whose forebears on one side were descedants of the Barb and therefore related to the pure Arab. These horses seemed pretty light in bone and to have too much daylight under them for such small horses. I believe a horse more on the type of our small Missouri or Kentucky saddle strain with heavier bone, shorter coupled and less daylight would make a better type of horse for our use, especially as our cavalry is not divided into light and heavy cavalry as is the case in France.

For service use where the horse has to subsist in great part by grazing, or by grazing supplemented only by a little corn or grain other than the kind to which he is accustomed, I believe that the thoroughbred will not stand the racket as well as the horse with only a moderate strain of thoroughbred in him. Personally, I have found a half-bred horse suitable for ordinary field service. I would rather have a quarter-bred horse than a thoroughbred horse for arduous service, especially if this

quarter-bred horse were of the general type described in the last sentence in paragraph 2 above.

I have not ridden a thoroughbred horse under arduous field conditions.

Major Frederick J. Herman, Q. M. Corps (Cavalry):

I do favor a service horse fifteen hands two inches in height or a little less, of proportionate conformation as satisfactory to our service. My personal observation has been that the shorter stocky horse is more serviceable and less liable to ailments and breakdown than the tall rangy beast at times found in our ranks.

I have had no practical experience with the Arab type as owner or observer.

I favor the cold blooded horse of proportions mentioned above, because such horses can be obtained in greatest numbers, at reasonable prices, and can most readily be replaced, and suffer less in body and spirit from the handling of the soldiers of mediocre intelligence so plentiful in our ranks.

I have owned a thoroughbred horse, and have ridden him under arduous field condition for two and one-half years in Southern New Mexico and Arizona. I found him hardy and free from disease, but rather prone to injury, and unduly sensitive in the feet, requiring constant molly-coddling with cold bandages and water stalls and light weight shoes. He was generally unsatisfactory as an officers' charger, prone to excessive bursts of speed at the wrong time, and too nervous for steady work. This particular horse was the offspring of a very famous pair of long-distance running horses, bred in Old Kentucky, a pretty good investment for use in the smaller racing circuits west of the Mississippi River, but frequently a nuisance at squadron and regimental drills, where he was supposed to "stay put."

I have observed many thoroughbreds and alleged thoroughbreds in our service, and while some of these horses were fine in the idiotic obstacle ride, and the present hour jumping

affliction of our army, the impression which remains with me is that they are a game not worth the candle. If we properly groom, feed and train the cold-blooded, stocky horse, leaving out the thoroughbred and high school horses, and those trained to useless things, I believe we will have a more uniform looking cavalry, that will take us somewhere. I do not believe in the cavalry horse as a "weapon." I did once, but in these days of machine guns and automatic pistols, I am not so enthusiastic any more. Nor does the officer on a stately thoroughbred charging alone appeal to me. A very dear friend in the cavalry owns a splendid looking thoroughbred, who does the Spanish Walk and other stunts, and is perfectly fine for the "Russian Ride" (for which he is maintained at government expense). On practice marches and quick dashes on the Border patrol he was either left behind in camp or carefully led in the rear of the column without saddle or pack.

Until such time when our government can be impressed with the importance and necessity for stock farms where the military horses for its armies can be scientifically bred under competent supervision—and provides the farms—the cold-blooded horse heretofore described appears to me to be the best for our cavalry, duly considering the portions of the United States and Northern Mexico where it is most likely to be employed.

I fully agree with Major Tompkins in what he says of the thoroughbred horse and of the blocky-built horses in our service. But we should not go to the opposite extreme in horse selection and imagine that American cavalry work can be properly done on ponies.

THE FORTY-SEVEN RONINS.

By Colonel FARRAND SAYRE.

AT Tokyo, I asked first of all to be shown the graves of the forty-seven Ronins. As we approached the graves we met about one hundred Japanese school boys, ten and twelve years of age, marching away under charge of their teachers.

The boys' military caps seemed oddly out of keeping with their wooden clogs and kimonos; they had evidently been brought here for inspiration and instruction.

The path leading to the graves was lined on both sides with booths, selling incense, pictures of the graves, souvenirs and other articles. The presence of the booths and the worn pavement attested the number of visitors. The graves were marked only by rough slabs of dark stone smoothed on one side and bearing a few Japanese characters. Some twenty or more men and boys were standing about, others were coming and going.

Two of the graves were covered with wooden structures, apparently to protect the stones from being chipped by souvenir hunters, and these graves had bundles of fresh cut-flowers and sticks of burning incense about them. I approached one of these two and asked a bystander what it was; he said "Oishi" and inclined his body reverently toward it. Going to the other and asking the same question, a man replied "Chikara" and his eyes shone with exaltation. Two middle aged, well dressed women came up and commenced laying sticks of burning incense on each of the forty-seven graves and making obeisances before each. And this was in May, 1916.

The deeds of the forty-seven Ronins and the respect in which their memory is held cast interesting lights upon Japanese characters. About two hundred years ago Asano Takumi no Kami, a Japanese lord, was insulted by another nobleman named Kotsuke. He drew his sword to kill Kotsuke

but succeeded on'y in wounding him. For this Asano was directed to commit suicide his propety was confiscated and his family ruined. His retainers became Ronins, masterless men.

Kotsuke was sufficiently versed in Japanese character and traditions to obtain a strong guard and keep it constantly about his person. The chief of Asano's retainers was Oishi. Learning that Kotsuke kept himself well guarded Oishi decided to bide his time. Accordingly the Ronins scattered and Oishi apparently gave himself up to an idle and dissolute life.

Spies sent by Kotsuke reported that Oishi was a worthless drunkard and had been seen lying drunk in the street at Kyoto.

In the meantime Oishi sent his comrades to Kotsuke's house from time to time disguised as peddlers, mechanics or beggars. After a year Oishi learned that Kotsuke had reduced his guard and relaxed his vigilance. Oishi and his son Chikara, a boy only sixteen years old, and others of Asano's retainers, numbering forty-seven in all, assembled at night in mid-winter during a heavy fall of snow and marched to Kotsukes house. They found only ten armed retainers on guard but these fought bravely and others came to assist them. Chikara attacked and killed one of them. All of Kotsuke's retainers were killed.

Respectfully bowing before Kotsuke, Oishi requested him to commit suicide; he declined to do so and Oishi decapitated him. Bearing Kotsuke's head, the forty-seven again took up the march, this time to Asano's grave. They laid the head upon their master's grave and then reported what they had done to the authorities and awaited their sentence. The sentence was, so they had expected, death; and they executed it by disembowelling themselves with their own swords. The march to Kotsuke's house, the fighting there and the march to Aasno's required two days and the marching was through deep snow. During these two days they obtained rest and food only once. Friends of Asano's family buried them in a group at the foot of Asano's grave. For two hundred years flowers and burning incense have never been absent from the graves of Oishi and Chickara and seldom absent from the others.

Murderers and suicides say you. Yes, but great heroes to the Japanese and their spirit lives in Japan. Those who fight the Japanese must expect to meet the patience, the fortitude, and the self-sacrificing loyalty of the servants of Asano.

A PLAN FOR PRACTICAL TRAINING OF RESERVE OFFICERS.

By Major CHARLES BURNETT, F. A., N. A. (Cavalry).

IT goes without saying that in any of our plans for preparedness, a bountiful supply of reserve officers is a pre-requisite to any degree of efficiency. This is one of the lessons of the European War, that admits of no question. That our own government realizes this may be seen from the present efforts of the War Department to secure a large number of such officers for use in case an attempt should be made to raise a large army.

A glance at the men now joining, or under training for that corps, however, reveals some disquieting features. It cannot be doubted that in many cases, excellent material is being obtained; but the fact remains that the great majority would be of little value should they be called upon for *immediate* service. Potentially, excellent, no doubt; but actually of litt'e or no account for a sudden need. What do you imagine they could do if they were suddenly called upon to lick into shape men even greener than they themselves? Anyone on duty with National Guard organizations during the past year, saw any number of fine, patriotic, self-sacrificing men, anxious to make efficient organizations; but the blind cannot lead the blind, and the military game cannot be learned from books and the armory. It must be borne in mind, too, that the average reserve officer is even less experienced than his National Guard brother. How can a man who has but a vague idea of what an efficient organization should be like, train green men to a state of efficiency? There are three things an officer *must* learn before he is of any value—an idea of what discipline means, a comprehension of the meaning of an order, and a sense of the value of time. Such things are not to be learned from books or lectures, nor are they learned in a day.

The plan proposed herewith contemplates, briefly, the use of an organization of the regular army to train an equal

or somewhat greater number of men, for reserve officers. It is believed that from 70 to 100 men can be accomodated in a troop, battery, or company. They would do duty in ranks just as enlisted men do, and *with the enlisted men*, as a great part of their practical education must and will come by absorption from men experienced in the service. From their daily life, they will imbibe, unconsciously, proper ideas concerning discipline, customs of the service, the value of time, the meaning of an order, and the thousand little things whose sum total makes the difference between efficiency and inefficiency. At the same time, they will get some insight into the psychology of the kind of men they would be called upon to train and lead in case of war. In addition to their drill, they would learn something of company administration, of methods of discipline, stable management, the company mess—all of which are of primary importance to a subaltern officer. How many of our reserve officers, present and future, know anything about the very ABC's of a subaltern's duties?

For the academic part of their course, they should study, under the troop officers, the subjects required in the examination for reserve officers for the grade of captain, first lieutenant and second lieutenant. (Administration, Hippology, Map Making, etc.). In almost every regular organization, there are non-commissioned officers capable of acting as instructors in these various subjects.

A course of six months, every day a working day, is believed to be sufficient to train intelligent, well-educated young men for the duties of reserve officers. The minimum time, however, could only be ascertained by experiment.

In order that no time should be wasted on unessentials, it is believed that such a plan would work best in barracks, where there are proper conveniences for studying. There are plenty of such empty barracks at present, and their proximity to a city would make it easier to obtain candidates. It is not believed that any trouble would be experienced in securing the men for such training. There are many who would like to prepare themselves, practically, to "do their bit" in case of war, and this plan, being the essence of practicality, would appeal to the very class of men desired.

As this is but a modification of the Citizens Training Camp idea, the matter of funds, etc., should cause no special difficulty, there would seem to be no insuperable objection to putting it into effect any time desired by the superior authorities.

After six months of such training, let us see what our future officer would know about the military game. He would have in the first place, a good idea of discipline, the very foundation of military efficiency; he would know what an order means; he would be something of a drillmaster, and would know his Drill Regulations thoroughly; he would be fairly familiar with company administration; and his knowledge of the academic subjects would enable him to easily pass the War Department examinations. Above all, he would be of value *at once*, and would not be in the way until a harrassed and overworked regular officer could find time to teach him something after hostilities broke out. Isn't that the kind of man needed? Are we getting that kind in the reserve corps now?

SOME CAVALRY PRECEPTS.*

By General SIR DOUGLAS HAIG.

"OUR cavalry failed, perhaps, not so much in actual capacity as in self-confidence. But all its initiative had been *destroyed at maneuvers*, where criticism and blame had become almost synonymous, and it therefore shirked independent and bold action, and as much as possible, kept out of sight far in the rear."†

"If then, it be granted that in a decisive struggle—in a *war* as opposed to a punitive expedition, large armies will be employed, and that with large armies will be their due proportion of cavalry, then the necessity to study and prepare beforehand how best such cavalry may be employed, can need no further demonstration."

"A cavalry subaltern is sent out in front of an army with three or four troopers, and he is told to find out all about the enemy. If he is lucky he may come across the enemy and get hold of a certain amount of data, although imperfect. On these data he has to form a conclusion as to what the enemy is doing, and that conclusion he has to send to his colonel or general behind, and on that the commanding officer perhaps,

*Quoted from *Cavalry Studies, Strategical and Tactical*, by Major General Sir Douglas Haig, and of more than ordinary interest now, in view of General Haig's brilliant record in the present European War, where he is commander-in-chief of the British Armies in France.—*Editor.*

†Quoted by the author from Moltke, but apparently applicable to the peace training of the British cavalry, and not without application in some degree, to the *repression* of our cavalry at maneuvers.—*Editor.*

bases his orders. It requires not merely the power to close observation. What is the good of officers knowing all these things unless they understand them?"

"The securing *tactical results*, the fulfillment of its mission, is the sole criterion of the real value of any arm, considered as a fighting instrument. And it is this very truth, although an elementary one, which the majority of those who set themselves up as judges over the cavalry, have not been able or willing to comprehend. Have we not all read, not without disgust, those strange statements, those wonderful statistics, in which a comparison of the losses caused by bullet and saber is used as a text for extolling certain particular tactics of the cavalry. It is fortunate if the conclusion is not positively arrived at, that cavalry is altogether effete and useless."

"In considering the work of cavalry in the field, we must never lose sight of the fact that the decisive and governing factor, on which depends the result and the value of that work, is Leadership; the quality and character of the Leading in one and all of the ranks of command, from the general, the Leader of the corps of cavalry, down to the non-commissioned officer, the Leader of a patrol. In cavalry work, individuals can make or mar to an extent almost, if not impossible, in the work of the other arms * * * . It is a simple fact that at any moment in a campaign, may arise for a cavalry Leader of any rank, a situation which, for its satisfactory solution, needs mental power and capacity, not often called on in Leaders of similar rank in other arms."

"It is commonly argued that, so far as India is concerned, cavalry divisions or even cavalry brigades will never be required, and can never be employed on or beyond the north-west frontier of India, owing to the difficulties of terrain and of

transport and supply. But with our vast and widely scattered Empire, it is impossible to say where our army may be required at any moment, and it would be suicidal to confine the higher training of the arm within the limits which appear, rightly or wrongly, to suffice for local requirements, when, without warning, its services may be peremptorily called for in some theater of war of a totally different character * * * . It must be borne in mind that the days of small armies are past, and it is a simple fact that *large armies entail large numbers of cavalry.*"*

"It is no longer economy to starve the cavalry arm. The extent of the objective calls for extended methods of procedure. Numbers, in modern cavalry, do not constitute merely a material force; they are also an element of moral superiority, an essential condition of energy and success. Concentration to the highest degree, combined action of the whole, decisive tactics are necessary * * * . In cavalry work it is Leadership that tells; and it is the power of rapidly grasping a situation, of being able quickly to come to a decision and at once issue clear and easily executed orders, that, more than the possession of any other faculty, brings success to a commander in the field.

"The development of this faculty ought to be the main objective of the training of combatant officers in peace, and close attention should be paid to all exercises which tend to develop a power of decision and skill in quickly drafting orders."

*This same argument has been applied to American cavalry, and even recently the difficulty of supply in Mexico, has been mentioned as militating against the mobility of cavalry divisions, by thoughtless writers on the subject.—*Editor.*

THE TACTICS OF THE MACHINE GUN.

The following treatise on the tactics of the machine gun is is taken from "The Book of the Machine Gun," by Major F. V. Longstaff, and Captain A. Hilliard Atteridge, British Army.

It contains the most recent deductions as to the use of machine guns from the lessons of the Great War, and appears at a time when not only are tactical secrets kept carefully guarded but when such information is most in demand by units of our army, preparing for overseas service.—EDITOR.

* * * * * *

MACHINE GUN fire is *concentrated* infantry fire. This statement is the general guide to its correct tactical use. But, like all general statements, it must be carefully considered before it is put into practical application.

For machine gun fire has special characteristics that are entirely its own. It can be concentrated like a jet of bullets on a single oval area, or by the traversing of the gun on its pivot it can bring a sweeping fire to bear over a wide front. Thus the machine gun gives to a small group of men the power of either keeping up a slow deliberate fire or delivering sudden gusts of fire, turning it rapidly on a diversity of targets or directing it upon one narrow space of ground, or again sweeping the front with a rain of bullets that produce the effect so well suggested by the French expression, *feu fauchant*—a *mowing down* fire.

The fact that only a few men are engaged in operating a group of guns, and that each gun is fired from a fixed support with mechanical control of elevation and direction, gives a further special character to its fire. *There is less scope for the errors introduced into infantry fire by the human element.* Nerves and excitement are to a large extent eliminated. A

body of infantry soldiers firing the same number of bullets will include a wide diversity of temperaments. As each man reloads and brings his rifle to the shoulder he will have to take a new aim; and experience shows that there are a few men who, in the excitement of battle, fire with anything approaching the steadiness of a fairly good shot on the rifle range. No matter how good the general discipline of the men may be, and no matter what earnest and well directed efforts their chiefs may make to exert control, the firing tends to become excited, the bullets go high. As the range diminishes and the crisis of the fight approaches this tendency increases in a marked degree.

The machine gun, *because it is a machine*, and because it is aimed by one man, delivers an ideally controlled fire. Various estimates have been made of the comparative effect of infantry and machine gun fire. Some of the most interesting data are supplied by trials carrried out by the United States Government about six years ago. The machine guns used were Vickers-Maxims. One of these guns was put in competition with a body of fifty riflemen. These were all exceptionally good shots, selected from a class at the United States School of Musketry. Further, it must be remembered that they were firing, not under battle conditions, but under range conditions.

Mr. Edward Crossman, who tabulates some of the results in a paper in the *United Service Magazine*,* points out that:

"The infantry fire was delivered by cool, trained, highly effective shots, without the disturbing effect of battle to count against them. In action it is far easier to hold down one or two men to cool, well-directed fire, than it is to hold down one hundred men. If the machine gun pointer proves temperamentally unfit because of lack of coolness, he may easily be replaced. And so in actual battle the fire of the gun, round for round, would be proably more efficient than the same number of rounds fired by infantry."

We may take it, therefore, that the gun was handicapped by the special skill of the riflemen.. Yet it more than held its own, the advantage being more marked as the range lengthened,

*April, 1915, p. 65.

and being especially noticeable when *indirect* fire was used against hidden targets. The superiority would be still more marked if the gun were put in competition with a platoon taken at haphazard from an average battalion. And again, it would doubtless be still more striking if the fire had to be carried out, not under the ideal conditions of the rifle range, but amid the stress and excitement of the battlefie d.

It is quite certain, therefore, that the machine gun has at least the fire power of fifty rifles. It is probable that this estimate might be safely doubled. We arrive thus at the conclusion that the probable fire power of a section of two guns is equivalent to the condensed fire power of two platoons of infantry.

And this condensation is the more remarkable if we take into account the fact that the machine guns require only a front of a few yards, while a hundred rifles deployed in the firing line in the first stages of an attack may cover nearly and eighth of a mile.

Hence we have another characteristic advantage of the machine gun. It is easier to conceal it from view and to secure for it effective cover against fire.

Again, firing from a fixed support it not only keeps its target and range better than even the best trained platoon of riflemen, but it has a longer effective range than the rifle fired from the shoulder.

But this is not all. Its fire is more effective. One cannot judge the effect of fire in battle by merely counting up the hits made on paper targets on a rifle range. We have seen that the human element must be kept in mind with reference to the men who are firing. But there is also the moral effect on the men who are being fired at. On the range there is no such factor in the fire effect on the targets. But in battle it is all-important.

As is so often the cause in discussing military problems, we are reminded of Napoleon's saying that in war the moral is to the physical as ten to one. In fire effect, not on targets, but on men, the moral effect is everything. One does not win battles by shooting down or bayoneting every opposing man, nor is a campaign decided by the complete destruction of the enemy in the literal sense of the word. Fire is intended to kill

or disable a number of the enemy, and to do this in such a way that those who remain will be *demoralized*—that is reduced to such a condition that they will no longer be steady, disciplined soldiers, but will cease to shoot straight, and be so shaken that they will give way before the final rush with the bayonet.

Now men are less impressed and less shaken by a comparatively heavy loss gradually incurred during a long space of time or over an extended front than they are by even a lighter aggregate loss inflicted on them suddenly, in a few minutes, and on a small space of ground. In the first case they hardly realize their losses and their danger. In the latter they are subjected to an intense moral strain. There is all the difference that exists between the prolonged pressure that a steel bar will sustain almost without bending, and the sharp blow that will shatter it.

The machine gun supplies the means of delivering this sharp blow. Its gust of destructive fire has a peculiarly nerve-shaking quality. Those who have to face it and witness its devastating effect on their comrades have the uncanny feeling that they are up against a machine, not merely fighting with other men. And the effect is all the more demoralizing when the machine itself is invisible and there seems to be no possibility of doing anything to put it out of action. To this we must attribute the well recognized fact noted in so many accounts of the action of the guns in battle, namely, that men seldom fail to remark the peculiar rattling reports of the machine guns (at least four different timings in reports—two German and two British), and are heartened and encouraged by hearing it on their own side, and depressed by recognizing it as it dominates the crackle of rifle fire from the attacking line, which they are trying to hold back. The machine gun has thus some share of the moral effect that belongs to artillery in action.

The machine gun, properly mounted and in the hands of duly trained men, should be as mobile as infantry in the actual fire fight. Modern machine guns have all been improved in the direction of lightening both the gun and its mounting. In moving from position to position in action the gun is light enough to be carried or dragged along the ground by one or two men. The guns are far more mobile than artillery, and

compared to the field gun, with its wheeled carriage and its team of horses, the machine gun presents an infinitesimal target, and of such small height that it can generally be moved under cover.

It has already been noted that in range tests against targets hidden by an intervening obstacle machine gun fire gives better results than that of infantry. This point is worth insisting upon. If the distance and direction of the unseen target is known, and it is within reach of even the longest range of the gun, the target can certainly be hit if the trajectory of the cone of bullets clears the intervening obstacle. And when one says it can be hit, this means that it can be kept under a steady rain of bullets. *It is not a matter of chance but of certainty.* With correct elevation, direction, and the gun fixed on its mounting, the descending cone of bullets will fall upon the same patch of beaten ground as long as the gun is kept in action.

These are the advantages of the machine gun. It supplies *condensed infantry fire,* and this condensed fire has characteristics that make it more effective than the fire of the steadiest infantry, if the machine gunner knows how to develop to the utmost the powers of his weapon.

RATE OF FIRE.

Every gun that can be fired rapidly has a certain drawback, the importance of which used to be greatly exaggerated. In the early days of machine guns it was objected that the gun would consume ammunition at a tremendous and even prohibitive rate, and would be liable to be put out of action by the mere want of cartridges. But any such objection is now of less force. The adoption of quick firing artillery and magazine rifles was opposed on the same grounds by the same conservative minded critics who find objections to every progressive change. In the case of machine guns the objection was largely based on a misconception. The objectors imagined that in battle the guns would be in action, and actually firing, for hours at a time. Experience shows that a machine gun properly handled is at work in most cases for a few minutes at a time. Fire is used when it will tell and tell heavily. The machine gun is fired to hit something, and is not to be handled as a mere

carriage destroyer. Nevertheless the aggregate consumption of cartridges may be very high, and the supply must always be ample. But this is a matter of starting with a good supply in hand and having proper arrangements for replenishing it. *It has been truly said that the winning of battles now depends to a great extent on the ammunition supply being previouly arranged in a methodical manner with a definite view to the intended operations. This is eminently true of the machine gun arm.*

Another drawback has also been made the subject of exaggerated criticism. In the early days of machine guns a distinguished officer of our own army said that he found that the gun had an awkward trick of getting out of order just at the precise moment when it was most wanted. This was largely at the time the result of the defective cartridge when in use, the old Boxer pattern with its composite case, which was liable to go to pieces under the pull of the extractor, thus blocking the loading chamber and jamming the mechanism. The solid-drawn cartridge-case has put an end to this source of trouble. But is true that machinery of any kind is liable to unexpected stoppage. The mechansim of a machine gun is not much more complicated than that of the modern magazine rifle. But in the case of the gun it works at a high rate of speed and is subjected to a rapid succession of shocks, several hundred a minute. The wonder is that break-downs and jams are so rare. When they do occur, in ninety-nine cases out of a hundred they can be set right within twenty-five seconds. But the fact that a stoppage can suddenly occur is the basis of the sound tactical rule that machine guns must always work in couples. Two guns form the smallest tactical unit, and we have seen that two guns represent a very considerable fire power.

The drawbacks enumerated are therefore met by a carefully organized ammunition supply and the working of the guns in sections of two each. Two other points may be noted. Machine guns, like artillery, are for the time being out of action while on the move, though they have the advantage that in *well trained hands they can come into action instantly.* The practical deduction is that once the guns are in a good fire position *they should not be moved without reason:* the movements

should be as rapid as possible, and the new position should be selected before the guns are moved.

Again, the machine gun has no place in the fight at close quarters. It follows, therefore, that during the attack it keeps in action as long as its fire can be maintained without danger to the assaulting troops. When the fire has to cease the guns are got ready to push forward and assist in holding the captured position against a counter attack. On the defensive in the same way, the guns will be kept in action till the last moment against the advancing enemy, but during the actual struggle for the position, and when the attacking force is penetrating into it, the machine guns should be withdrawn and held ready, either to cover the retirement or to be pushed forward to reopen fire on the retiring enemy, if the assault is repulsed.

Machine gun tatics have suffered somewhat from the false analogy between machine guns and artillery. Some trace of this false view still lingers, and there is evidence of it in the fact that during the present war captures of machines guns on both sides are enumerated as if they were captures of cannon. The Service Regulations of all armies now lay it down that there are occasions when guns can be honorably lost in battle. As, for instance, when a battery sacrifices itself to cover a retirement. This is true, even in a greater degree, of the machine gun. The weapon is so easily manufactured, *and should be available in such large numbers,* that the loss of a few guns is not really a serious matter. *It is much more difficult to replace the trained officers and gunners of a section than the guns themselves.* Too great anxiety to prevent the guns becoming war trophies for the enemy may easily lead to an abscence of enterprise in the attack, and on the defensive it may have an equally unfortunate result. There is the danger of guns prematurely ceasing firing in order to be withdrawn, perhaps ceasing fire at the very moment when their rain of bullets was shaking the near advance of the enemy. The machine gunner must be prepared to risk the loss of his gun, and prepared also to disable it at the last moment, so that it shall be of no use to its captors.

A practical working system of machine gun actics must be based upon the effect to make the most of the characteristics powers of the weapon. If it is to be used effectively, it must be in the

hands of officers and men thoroughly familiar with their guns and imbued with the enterprising spirit that will seize and make the utmost use of every occasion of their intervention in the fight.

In the various opinions on machine gun tactics which are quoted or summarized in the preceding chapter, it is evident that the writers had in view the defensive attack of an enemy's position in pitched battles fought in the open. In the present war we have been brought face to face with a state of things which is not really new in its essential features, but is new in the extent of ground over which a special condition has prevailed and the length of time during which this condition has dominated the operations, especially on the Western front. Instead of battles in the open and a war of movement and maneuver, we have what are virtually prolonged siege operations between armies entrenched on prolonged fronts and close up to each other. *We have said it is not new, because siege warfare is as old as war itself, and, further, the fight for entrenched positions with both sides dug into the ground has been a feature of many recent wars, beginning with the Wilderness Campaigns in the American Civil War.* The war of entrenchments has played a part in every campaign since Plevna. The battles of Liao-Yang and Mukden in the Russo-Japanese War were prolonged entrenchment fights. But in this war the entrenched fronts in the Western sphere of operations are of a *length* for which there is no precedent in any previous war, and the condition of stalemate has lasted for months.

MANEUVER BATTLES.

Those who are training our machine gunners have, therefore, had their attention riveted on the question of their employment in this prolonged entrenchment fighting—a very different business from their use in maneuver battles, and one hardly contemplated by early writers on the subject. In conversations with machine gun instructors, one finds indeed a tendency to leave entirely aside the question of machine gun tactics in the open. But, as the records of war in the Eastern Europe show, there is still a place for the *maneuver battle*, and the war of entrenchments is not everything. But the conditions of these two kinds of fighting are very different, and in discussing

the tactics of the machine gun there must be a separate treatment of the machine gun in maneuver battle (which has been so fully discussed in recent years) and the use of the machine guns in the effort to break an entrenched front by an operation which on a vastly larger scale is similar to the assault on a besieged fortress.

EFFECTIVE RANGE.

So far as the machine gun is concerned, a radical difference between the two kinds of fighting arises from the question of range at which the guns are brought into action. We have seen that in the evolution of machine gun tactics there has been a steady tendency to regard medium and short ranges as those at which the gun can be used with the best effect in battles in the open. This arises from the fact that normal machine gun fire is concentrated fire with a very limited beaten zone—*a fact which suggested the rule that fire, of which the effect could not be observed, would be wasted.* It was felt that the efforts to bring long range fire to bear upon an enemy's supports by spraying the ground behind his firing line with machine gun fire, would generally be mere random work depending on pure luck for serious effect, and that in most cases it would mean a costly and most useless expenditure of cartridges. This was held to be work for the artillery, not for the machine guns, and that guns supporting infantry could be of the most service to them by holding their fire until medium ranges were reached and then using it as the opportunity offered to support the advance.

The same consideration led most writers on machine gun tactics to regard indirect fire as somewhat exceptional, peculiarly difficult, and of doubtful effect. The tendency therefore was to concentrate attention chiefly on the *use of machine guns with direct fire and at ranges of a thousands yards and under.*

But the fact remains that while infantry fire at long ranges is only exceptionally effective, the machine gun on its fixed mountings can range up to 2,800 yards, and in properly trained hands can make good shooting at this extremely long range. Further, the height of the trajectory at long ranges favors indirect and overhead fire by making it a simple matter to clear intervening obstacles and to fire safely over the heads of one's

own advanced troops. In view of these facts, one asks oneself if with a gun ranging up to 2,800 yards there is no means of making efficient use of its powers beyond less than half this distance. Experience of the machine gun work in the entrenchment battles of the Western front shows that, whatever may have been written on the subject before the war, *there are plenty of means of using the guns at even the longest ranges in this new kind of battle.* It remains true that machine guns must not be confounded with artillery, but nevertheless some of the recent developments in their use tend to assimilate it to those of the heavier weapon.

In most of our training camps at the present moment it is laid down as a general rule that the effective ranges of the machine gun lie between 1,000 and 500 yards. This, however, refers to machine guns acting with infantry and pushing forward with them in the advance. The use of the guns at longer ranges is for covering fire over the heads of the infantry they are supporting, *or directed against the enemy's supports* and the lines by which he is bringing up his reinforcements to the fighting line. This ong range fire will often be indirect against targets unseen by the gunners themselves, and on account of its high angle it will generally be somewhat similar to indirect fire. We have seen that the view which for a long time barred the use of long range indirect fire for machine guns was based on the quite sufficient reason that in most cases the results obtained would be doubtful and out of all proportion to the amount of ammunition expended. But this objection is removed by methods more recently worked out and rendered possible by the special conditions of the prolonged entrenched battles of today. We may say, ndeed, that there are now two kinds of machine gun tactics: *the tactics of long range*, rendered possible by the conditions of the entrenchment battle, and *the tactics of medium and short ranges*, which have their place in the maneuver battle in the open, and the assault during the entrenchment battle.

The special conditions that render long range fire practicable and effective are these. In the entrenchment battle prolonged not only over days, but it may be over weeks, the enemy's position is fixed and easily defined. More than this,

systematic aerial reconnaissance, day after day, renders it possible, not merely to fix the general position and limits of the hostile position, *but also to map out most accurately the position of the advanced trenches which form his firing line, the trenches farther back, where he keeps his supports and reserves, and the lines by which these supports and all supplies of ammunition must be brought up to the advanced trench, these lines being the communication trenches.* Not only is the enemy's firing line permanently fixed to a definite position, but all movements immediately in rear of it must necessarily follow clearly fixed lines.

During the long preparation for an attack upon the enemy, all these positions and lines of communication can be accurately laid down, if large scale maps of the ground he holds are available. In the warfare on the Western front these maps, elaborately contoured at short vertical intervals, are available, and this not only facilitates the mapping of the enemy's position, but also makes it perfectly easy to work out rapidly, accurate section of the ground on any line of fire in ts front. It is, therefore, possible to select a machine gun position in our own lines, or in rear of them, from which by indirect fire, selecting the appropriate range and trajectory, the bullet sheaf from the guns will clear the intervening obstacles and descend upon a given spot in the enemy's lines. *That the bullets will strike the selected patch of ground in the enemy's position is not a matter of chance, bu of absolute certainty.* This would not be the case with long range fire from a platoon of riflemen. A number of men, no matter how well trained, will not go on steadily bringing the rifle again and again to the shoulder with absolutely the same elevation and direction. But the machine gun, once clamped on its tripod, delivers its fire with mechanical certainty on the same spot.

It is quite true that even with the help of aeroplanes, there cannot be the same easy observation of fire effect as in the case of artillery with its bursting shells. There can, however, in many cases be observation of fire, either from the air or from the ground, but this is not necessary to make this kind of long range fire effective. The important point is that reconnaissance of the enemy's position can reveal the *areas where it is vulner-*

able to machine gun fire, and this fire can be directed on these areas with certainty, and with the result that the fire from the guns will harass the enemy, impede his movements, and inflict loss upon him.

A few details will make the matter clearer. At these long ranges the fire of the machine gun is no longer a closely concentrated jet of bullets, but spreads over a beaten zone, oval in general form, somewhat like the beaten zone of shrapnel, but not so large; its major axis will be in the direction of the line of fire. With lighter guns, like the Colt, the beaten zone will be rather larger than with the heavier and steadier Maxim. In this case the slight vibration of the Colt and similar guns is an advantage rather than a drawback, for it tends to enlarge the beaten zone, whilst still keeping it within sufficiently moderate dimensions for accurate fire.

To take some practical instances, the enemy's communication trenches immediately behind the first line have been located and mapped. During an assault it is certain that he will be sending up reinforcements and supplies of ammunition along these trenches. Positions are therefore selected from which machine gun fire is brought to bear upon each of those communication trenches. In selecting these positions, sections are drawn of the intervening ground in order to select the range and trajectory that will be most effective. It is seldom that fight ng takes place on perfectly even and level ground. Even what we call plain is in Western Europe, in most cases, a series of gentle undulations. Reserve trenches will often be placed in rear of the crest of a slope of ground. In such a case one will find the communication trenches running back by the reverse slope of the rise in the ground to support positions in rear of and hidden by it. In such a case it will often be possible to slect a machine gun position that will give a trajectory which will sweep the reverse slope. The angle of descent of the bullet sheaf conforming very closely to the slope of the ground, such a fire will be very deadly and embarrassing to the enemy; it may even prove to be a barrier through which he will find it impossible to push forward his reinforcements.

It is obvious that the longer the range the more chance there is of selecting lines of trench that are open to enfilade.

In the entrenchment battle the advanced trenches on both sides are fairly near each other at the outset. By using the longer ranges of his weapon, the machine gunner with his guns in position behind the advanced lines can pick out lines of trench far away to right or left, on which he can bring a diagonal indirect fire, sometimes enfilading a considerable length of trench. It is all a question of having absolute confidence in the gun, bringing its rain of bullets to bear on the selected, though perhaps unseen, point, and a careful prel minary study of the forms of the ground and the possible trajectories of the weapon.

The beaten zone of machine gun fire, even at long ranges, is so moderate in extent that several guns will have to be used together to sweep a given extent of ground either in frontage or depth, though the single section of two or four guns is quite sufficient when firing upon a narrow target, such as a communication trench running up to the enemy's front. The number of guns to be used will be settled by the extent of the target. The range being given, the machine gun officer can say, "With so many guns at such a distance, I can cover such and such a space of ground with a steady rain of bullets." Actual experience has shown that he has thus the power of inflicting serious loss on the enemy's supports, and even driving them from point to point in search of cover or escape from the showers of bullets that are descending from some unseen firing point. *Colonel Mayne years ago (1903) argued for the possibility of sweeping with rifle fire the reverse slopes of hills or rising ground behind which an enemy was sheltering his support and reserves.* The idea was perfectly sound in principle, but a difficulty arises in its realization in practice, from the unsteadiness and uncertainty of indirect fire. The steady certainty of the machine gun remedies this, and makes Colonel Mayne's idea of indirect fire with trajectories conforming to the slope of the ground perfectly practicable.

One need hardly point out that, with gunner trained to use long range fire in the way which has been described, it will be a simple matter for them to use the same kind of fire over the heads of their own infantry in support of an assault. Many writers on tactics show a reluctance to admit of the firing of

machine guns over the heads of advancing infantry and in support of it, on account of the danger of the gunners inflicting loss on their own friends. With the least care as to watching the advance of the infantry, this danger utterly vanishes with the high trajectories of long range fire. In fact, it can ony exist when the guns are firing from positions close behind the infantry, and therefore at medium and short ranges.

SIEGE BATTLES.

There is, of course, in the entrenchment battle, which is a prolonged series of trench operations, and in the assault, which is its culmination, abundant scope for the use of machine guns at short ranges, as well as for this elaborately prepared indirect and high-trajectory fire at long ranges.

The use of machine guns at short range in the assault approximates to its use in the maneuver battle in the open. But there are certain differences. In many ways the task of the machine gunner is simpler. Thus, there is no question of the gradual advance from position to position during the preliminary fire fight of the battle in the open, an advance which requires some of the highest qualities of leadership. In *the entrenchment battle* the position for the guns at the outset will have been deliberately chosen beforehand. There will be selected points in the advanced line of trenches to which the guns will, of course, be brought up under cover by the communication trenches, probably during the might. There will be no difficulty about ammunition supply, for an abundance of cartridges will have been collected at the gun positions. The enemy's line having been carefully mapped in advance, the choice of targets will be easy and the ranges can be fixed with absolute accuracy. At the outset these will be very short and all within fixed sight range.

There is a special kind of preparatory work which is sometimes assigned to machine guns in the advanced line before the assault. They may help in the destruction of the wire entanglements in from the of the enemy's works. They cannot do much damage to the wire itself, but the supporting posts can be cut down by the stream of bullets from the gun. It is an application in practical warfare of the trick with which Sir

Hiram Maxim used to impress the spectators at trials of his gun when he was first exhibiting it. He used to cut down a tree three or four hundred yards off by firing upon it with a short traversing motion of the gun to distribute the bullets across its entire width. In this way he often brought down a large tree with a single belt of cartridges. In firing on an entanglement far fewer shots are necessary to bring down a supporting post, for once it is badly damaged the tension of the wire support will often be quite sufficient to break it off near the ground.

Once the assault is launched the guns in the advanced trenches will push forward after the first wave of the attack. Having got into the enemy's position, their work will be to assist the infantry in clearing points to which he still clings, breaking up any attempt of the defense to rally or to counter attack.

In a close fight of this kind there are greater chances of enfilading communication trenches and trenches of the second line, and in fight for villages within the enemy's line the guns will be able to use their concentrated fire in clearing the streets.

It is held by some that machine guns should not attempt to engage the machine guns of the enemy, leaving to the artillery the work of silencing them. But in villages and trench fights there may be exceptions to this rule. There will often be a chance of opening fire on hostile machine guns, not directly from the front, but obliquely or from the flank, and the more suddenly the fire is opened the more effective it will be. In village fights guns are sometimes found mounted inside a window on the ground floor or the first story of a house. It is difficult to silence them with infantry fire, but we have here another case where a machine gun may be usefully brought into action, not, of course, in the open and under the direct fire of the enemy's machine gunners, but after bringing it up under cover behind a wall or other obstacle, or inside of a house, from which the hostile machine gun posts can be seen. The action of the gun at short range is then like that of a fire hose directed upon the window that is attacked.

In the fighting inside the village of Loos on September 25th, it is said that effective use of machine guns was made in

clearing the houses by bringing them up to close quarters and firing a few rounds upon them into the lower windows of the houses. The rapid reports of the gun were sufficient to stampede the enemy holding the houses attacked.

The lighter type of machine guns without a feed belt, such as the Lewis, Hotchkiss and Madsen, are the best adapted for this kind of close fighting, which will often entail hurried movements under cramped conditions.

But perhaps the most important work of the machine gun in the assault will be the part they will take in securing permanent possession of the captured ground. Attempts at counter attack will be practically certain to be made, and it will often happen that the direction of these attacks can be easily forseen, and the lines of approach for the enemy will be restricted by existing obstacles, and the tendency to use communication trenches and similar partially covered lines of advance. The attacking force will also tend to collect in a mass of men either from the very outset or at the first check to those in front. The range will also be short. Also help from long range machine guns. All these conditions are favorable to machine gun effect, and it will be essential to have a number of guns got into position in the captured works at the earliest possible moment, and placed so as to sweep the probable lines of counter attack. A captured line of works will in most cases have an irregular frontage, some portions of it lying well to the front of the main line, and these advanced points will afford good positions for bringing the enfilade fire of machine guns to bear on the counter attack, and at the same time such a salient position can be strengthened by placing guns farther back to the right and left of it to sweep the fronts and cross their fire beyond the angle of the salient. These points suggest that it will be useful to have an officer (Divisional M. G. Officer) detailed to direct the general organization of the machine gun defense in the captured position, instead of leaving it to officers commanding smaller groups of guns to push them forward here and there is a somewhat haphazzard way, suggested by their own impressions of local needs and without *taking into account the necessity of coöperation, which will make the fire of a smaller number of guns thus organized on a general plan even more effective*

than that of a far larger number put into the front here and there by individual section commanders.

The tactics of mach ne guns on the defensive in entrenchment warfare hardly need any lengthened explanation. What has been said of the use of the guns in securing a captured position applies equally to their use in protecting the advanced lines of entrenchments against a possible assault or some local enterprise of the enemy. Entrenched positions are now held for such a length of time that their defense can be as elaborately arranged as that of a permanent fortress.* With a comparatively small number of machine guns installed in carefully concealed and thoroughly well protected positions, provision can be made for sweeping with flanking fire long fronts of the advanced trenches, and at the same time guns can be used from positions farther back to bring a high angle fire to bear upon the supports of a hostile attack. The mobility of machine gun sections and motor machine gun batteries also provides ready means of reinforcing any point of the front that is attacked.

NIGHT FIRING.

Various methods have been devised for using machine guns at night in repelling attacks on an entrenched position. Many of these plans work out fairly well on the rifle range, but in actual fighting it may be said that night firing is only effective when the simplest arrangements are adopted. Complicated devises are apt to give disappointing results. Where the target can be illuminated with the help of searchlights, star-

*In their arrangements for defending their entrenched positions, the practice of the Germans seems to be to have very few guns in the first line trenches, but considerable numbers of them in the second line. This arrangement is based on the theory—justified by the experience of many attacks made from both sides—that, given a sufficiently powerful artillery preparation, the first line trench can be nearly demolished, and then easily rushed along a considerable front. The further progress of the assault then becomes much more difficult, and the really serious fighting is for the second line of trenches, and the machine guns massed there are a most valuable element in their defense in this critical stage of the battle. In several narratives of the Battle of Loos one finds officers and men who took part in the assault telling of the heavy loss inflicted by machine gun fire in the advance beyond the first line of trenches—losses far exceeding anything that was incurred in the rapid storming of this first line.

shells, flares, and the like, the conditions approximate to those of daylight. But where the firing has to be done in the dark, without such helps, it is safer to be content to use it only where the guns can be laid in the daylight on a limited line of approach over which the enemy must come—a road, a bridge, a defile and the like; to clamp the gun in the required position; to keep the fixed elevation and use only a very limited amount of traversing. There are various plans for marking during daylight the various positions in which the guns can be placed, and then putting it into position and opening fire in the dark, but all these complications give many openings for error, and the only safe rule is to use none but the simplest methods.

MANEUVER BATTLES.

Before the war, writers on machine gun tactics devoted their attention chiefly, or even exclusively, to the use of the guns in the maneuver battle, fought over open ground. But the prolonged fighting on entrenched fronts, which has been the predominating feature of the war in the West of Europe, has tended to concentrate attention almost entirely upon this curious combination of battle and siege methods, but the tactics of machine guns in the open have still their importance. It is obvious that, where armies have become committed to the prolonged warfare of entrenchments, the result is a kind of stalement or deadlock, and that a decisive result can be obtained only by one side or the other breaking through the opposing entrenched lines, this success being the prelude to a series of further movements that will involve maneuver battles.

It is true that even in these battles there will still be entrenched positions, for nowadays no body of troops will halt even for a single day without strengthening its position and digging itself into the ground; but the entrenchments, on account of lack of time will not be of very formidable character. They will be very different from the elaborate and complicated works that have gradually grown up during long months along the opposing fronts in France and Flanders. They will be more like the shelter trenches, gunpits, and other light field works, which we find described in the drill books of many years ago (1893), and on both sides the main resource for securing

cover will be the use of the existing natural features of the ground. Under these conditions we shall have again battles fought out in the open.

In such a battle the most important work for the machine gun will be to support the infantry attack. This support can be given in two ways—by long range covering fire, and by the fire of machine gun sections accompanying the infantry advance.

As for the first method. There certainly will be occasions when the long range fire of the machine gun may be usefully employed. In discussing machine gun tactics in the entrenchment battle we have described methods by which this kind of fire has been effectually used at ranges up to 1,800 yards. The special conditions of the entrenchment battle, the thorough mapping of the ground, and the accumulated results of aerial reconnaissance, make this kind of fire easier to employ than it will be in battles in the open. But this only means that in the latter case it will not be so frequently employed as in the former. The experience of entrenchment warfare has shown what are the powers of the weapon at long range, and it would be irrational to lay down fixed rules that no attempt should ever be made to use the machine gun under somewhat analogous conditions in the open, or to fix a thousand yards as the extreme limit of its useful employment.

We would suggest that there is all the more reason for endeavoring to develop the use of the gun at long ranges, because if it can be successfully employed in this way it would meet a practical requirement of the modern battlefield. A few years ago the normal range at which field artillery came into action was frequently fixed at about 2,500 yards as an ideally satisfactory distance. It was after the experiences of the war in South Africa that field artillery ranges were lengthened. Until then our shrapnel fuses were designed for action at ranges at which the artillerists of today count as medium or short, not long. With the lengthening of the artillery range we have left between the normal artillery positions and the ranges at which infantry come into action an intermediate zone, for which there is no approximate weapon. The long range fire of infantry is notoriously of problematic value, and effective only under very

special conditions, with very highly trained men and with exceptional leadership. Our infantry rifle is sighted up to more than 2,500 yards, but in practice is hardly ever fired at even half this distance. At ranges above a thousand yards machine gun fire has been proved to be far more accurate than infantry for reasons that have already been explained.

But if we take the broad zone of possible ranges from 1,000 up to say 2,500 yards, we will find that, as a rule, artillery will not be brought into action at these ranges. It will generally be easier to find new positions for it beyond the 2,500 yards limit. At these longer ranges its fire will be effective, it will have a larger choice of targets, it will be easier to concentrate the fire of several sections on a given point, and there will be greater facilities for cover and concealment from view.

On the other hand, machine gun sections can find positions which will give them sufficient and even ideal cover on grounds where it would be impossible to find shelter for a battery of artillery, and we would suggest that the normal ground on which the machine gunners should seek for positions for long range covering fire in support of the infantry attack should be in this intermediate zone between the long range infantry positions and the nearer artillery positions, a zone of ground nearly a mile wide. The machine guns would thus fill a gap in the arrangement of the various zones of fire on the battlefield Their action will be analagous to that of the long range machine guns in the entrenchment battle, which has already been described. The section of machine guns will probable have to change its position during the fight. It can somewhat deliberately select the ground on which it will come into action, the chief requirements of which will be good cover, which can be artificially improved, and a view to the front that will enable fire to be brought to bear upon the point attacked; or, alternatively, indirect fire can be used with the help of an observation station, and the gunners need not have a direct view of their targets.

More intermediate support can be given to the infantry attack by the machine gun sections which actually accompany it. Before the present wars it was a generally accepted idea that machine guns could find a place even in the actual firing line, but one sees now the tendency in some quarters to regard

this as impracticable, and restrict their activity on the battlefield to covering fire. Those who hold this view suggest that if it is desired to increase the volume of fire in the actual front of the attack by mechanical means, this can be done by arming a certain number of the men in the firing line with automatic rifles, or if machine guns are used for this purpose, giving them guns of the type that approximates to the automatic rifle, such as the Lewis gun.

There is a possible objection to this suggestion, arising from the question of ammunition supply. Whatever kind of rifle the soldier carries, whether the ordinary magazine rifle or the automatic, or the Lewis gun, the increase of fire power can only be secured by his having a supply of ammunition greater than that which the infantry soldier ordinarily carries. The limit of this possible supply is soon reached, and if it is to be increased the soldier must be accompanied by ammunition carriers. We thus come back to something very like a small machine gun section. If we are to have men in the firing line doing the actual firing, while others attend them as ammunition carriers, we have the group of men which the opponents of the employment of machine guns in the firing line regard as a dangerous target to hostile fire. The objection is not serious, for the group can work together without actually standing side by side and attracting attention. But once we recognize the possibility of placing such a group in the firing line, there is no reason why the group should not be provided with the more powerful guns of the Maxim, Vickers, Colt or Hotchkiss type, and have the advantage of a second group with a reserve of cartridges working under cover somewhere in their immediate rear. This gives us the machine gun section, and the experience of the actual work on the battlefield in earlier wars shows that, with good leadership and proper use of ground, such a section of machine guns can find a place in the firing line without drawing upon itself a destructive hostile fire.

We take it, therefore, that in coming battles in the open, besides the long range covering fire of the machine gun in what we have described as the intermediate zone, it will be well to have machine gun companies accompanying the working with the infantry in the attack, in order to increase their fire power

and give them the advantage of suddenly concentrating an intensely powerful fire upon a given area in the hostile line when the opportunity offers.

The conduct of such machine gun companies will require very high qualities in their commanders. They will not have an easy task to perform. They will have to be complete masters of their weapon, have a good eye for ground, a sound and ready tactical judgment of the situation, and the enterprising spirit that will seize and make the utmost use of every occasion for their intervention in the fight. These opportunities are often very fleeting. The chance of using the guns presents itself, and if it is not recognized and seized at once the situation changes and the occasion has passed away.

It is obvious, therefore, that a considerable independence of action must be left to the machine gun company commanders, and their own initiative must be largely relied upon for their timely and effective coöperation with the troops of other arms with which they are acting. It has long been recognized that on the modern battlefield, once an attack is launched, the directions of the actual fighting necessarily passes into the hands of officers commanding small units. In the infantry attack the battalion commander has to content himself with giving general directions at the outset to his company officers, and relying upon them to act as circumstances may require once the advance begins. It follows, therefore, that once the machine guns are sent forward the same liberty of action must be left to the commander of a section of guns that has already been conceded to company and platoon commanders. In the case of the machine guns this is all the more necessary because their tactical handling must depend entirely upon the judgment of the officer who commands them, and the opportunities for their effective action has to be seized at once.

The machine gun officers will therefore be given at the outset of the attack complete instructions as to its general plan, and a direction as to the way in which they are expected to cooperate. After this all details of execution must be left entirely to them. *If the machine gunner cannot be trusted to make the best use of his guns, he should not be in command of them, and*

the only men who can judge as to what is possible or useful is the man behind the guns.

Even if the machine guns are organized in companies, the section will still be the tactical unit. Where the guns are all together the company commander can direct them to a certain extent, but he will direct them in the best way if he handles his sections as the battalion commander handles his companies—namely, by giving only general instructions and leaving to the section commanders as great a freedom of action as possible. This is not asking too much, for we have seen that there is good authority for regarding the fire of a machine gun section as practically equivalent to that of a platoon of infantry.

Our Manual of Infantry Training lays it down that there can be no set form for the attack. General principles are stated, but the circumstances of each occasion are the only guide as to how these are to be carried into effect. When the machine gun sections become a part of the attacking force the same rule obviously holds good. One cannot fix in advance what their place is to be in any and every attack. All that one can do is to note some general principles to guide the machine gun officer.

In the chapter on the evolution of machine gun tactics we have seen that two different opinions have been put forward as to the place of the guns in the opening stage of the battle. According to some writers, they should be held in reserve at the outset, until the opportunity comes for pushing them into the fight. According to others they should be with the infantry in the firing line from the very beginning of the advance. There is something to be said for this latter view. Amongst the considerations which recommend it one may note that in the first stage of the attack there will occasionally be opportunities for taking advantage of the long range fire of the machine guns, and further it is obvious that there will be many situations in which it will be easier to carry the guns forward under cover if they start with the fiing line than to bring them up to it when it has already made some progress and its movements are being carefully watched by the enemy's observers. The movement of the guns into the line in such cases betray their position at once and betray them to the chief danger that machine guns

have to face—namely, the deliberately concentrated fire of hostile artillery.

It is, however, possible to take a middle course *now that machine guns are being multiplied in numbers in all armies.* The question of putting them into action at once or holding them in reserve was more difficult to solve when only a few guns were available. *Now that there are many of them, one may perhaps take it as a good working rule to divide the force, put some machine guns into action at once, and hold the rest in reserve for a while, to be sent up as the firing line is reinforced, or to be pushed forward to bring a storm of concentrated fire to bear as ordered.* A reserve of this kind is so valuable that it is well worth while to keep it in hand until the development of the fight shows where it can best be used.

It may perhaps be objected that this is the revival, in the case of the machine gun, of a tactical theory that was tried and abandoned in the case of the artillery. It was long the fashion to divide the artillery into the field batteries that were put into line at the outset of the battle and the reserve of artillery that was held in hand to be pushed in at a critical moment. The accepted doctrine now is that, unless exceptional circumstances, to keep guns waiting in reserve is to sacrifice fire power. But in the case of the machine guns we must guard against being misled by the old false analogy between the field gun and the machine gun. The rule always hold good that machine guns are not artillery, but are "condensed infantry fire." *The reserve of machine guns do not represent fire power left idle but they should be classed with the infantry supports and reserves kept in hand to be used to reinforce and carry forward the firing line.* It will only be under exceptional circumstances and with small forces that it will be advisable or even possible to put every rifle into the fighting line at once, and the same hold true of the machine guns.

The final orders for the attack will, if possible, be issued with the actual ground in view. With the machine guns as with the infantry, it is all important that a good start should be made. It is almost impossible to remedy at a later stage any serious error made in the launching of the attack. In its preparation there should therefore be an absence of hurry. This

does not mean that time should be lost, *but the worst loss of time arises from mere restless precipitation. If the machine gun officers are properly trained, they should be able to carry through the deliberate preparations for the opening of the attack very quickly. It is important to have a good look at the ground, and previous practice in the study and appreciation of ground will make the work of reconnaissance a matter of a few minutes.* The point to be kept in view is to look out for a first fire position for the guns, and the best way of getting them up to it, *and then with the help of the map and such view of the ground as can be commanded to try to get a genral idea of where further positions are to be found as the firing line presses forward.*

Obvious facts are sometimes forgotten, therefore it would be well to note that, though riding on to the actual ground and remaining in the saddle gives an officer a better view and enables him to move about more rapidly, it is a sound rule to dismount under cover and do the actual reconnoitering on foot. Even then one must take care not to stand out in the open, and the range finder who accompanies the officer should not stand close to him, and should be equally cautious about being seen from the front. *Keeping low down and under cover, and looking to the front from a kneeling position, has the further gain that the reconnoitering officers will get the same view of the ground that will present itself to the machine gunners when the guns are brought up.* This careful use of cover in the reconnaissance is all important. Even at long range there are hostile eyes on the watch, with good field glasses and telescopes to help them, and the appearance of an officer and a range finder moving about an examining the ground will suggest to the enemy, if he sees them, that perhaps not machine guns, but even field guns will soon make their appearance, and the enemy's gunners may then be on the lookout to pour a storm of shell on the very position that had been selected.

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APPLICATION OF FIRE.

As to the targets selected for fire in battle, one cannot always expect to have the ideal target, combining depth with front. It will often happen that guns will have to be brought

into action against what is theoretically a bad target—namely, a hostile firing line in very open order. To obtain a good effect in such a case the action of several guns will have to be combined first to find the target and then to bring a considerable part of the skirmishing line simultaneously under fire by *placing the descending bullet sheaves of the guns side by side along the hostile front.* This will give a prospect of suddenly sweeping away a whole sector of the enemy's fighting line, and will produce a greater effect than a mere spraying of the line from right to left by traversing fire. It is an application of the principle that the greatest moral effect is produced by sudden and serious losses.

In Russian narratives of the Manchurian War one finds some instances of effective machine gun action against a Japanese firing line by the method known in the Russian army as *zone fire with sweeping.* This consists in firing a certain number of rounds at varying elevations, at the same time traversing the gun from left to right and back again, the object being to cover a rectangular space with a hail of bullets. In an article published in the *Revue d'Artillerie* in January, 1905, which gave long extracts from the diary of a Russian machine gun officer, published in the *Russki Invalid*, there is an account of the dispersion of a Japanese attack in open order by this kind of fire. In the same narrative we have an account of the destruction of a Japanese battery on the move. In this case combined sights were used with four guns, the first firing at 1,200 paces and the others increasing the range each by twenty-five paces. The destruction of the battery cost 6,000 cartridges.

In discussing the use of machine guns on the battlefield one naturally thinks first of the attack, but n every battle they will also have to be used on the defensive on certain parts of the line, and even where an attack is in progress there will continually be periods when the guns have to be used temporarily and locally on the defensive. In fact, one of the chief uses of the guns will be to provide an ever-ready reserve of fire to hold the enemy, break up a local counter attack, and secure the ground already won.

GUN INTERVALS.

In both attack and defense there should not be, and there need not be, any crowding together of the guns. As a rule even the two or four guns of the sect on should not be close together, and the massing of sections side by side is generally a mistake. By keeping them apart, there is less chance of their becoming easy targets for hostile artillery fire, *and they can combine their own fire*, even from widely dispersed positions—in fact, dispersion is an advantage, for thus the guns can more easily cross their fire, and oblique fire is generally more effective then frontal fire.

REAR GUARD ACTION.

In case of the temporary or complete failure of the attack the machine guns will have to do their utmost to cover the reorganization or retirement of the infantry they are supporting. Some of the guns will be used to create a screen of fire between the infantry and the enemy; others will use high angle fire against the reserves which the enemy is bringing up for the counter attack. Work of this kind is practically rear guard action. In a prolonged retirement a rear guard should be well provided with machine guns In such a case it will be well to place a number of sections or companies under one commander, who will supervise their general movement, and the best plan to adopt is to divide the machine gun force into two portions, one of which will be in action, while the other is taking up a second position farther to the rear. The guns of the first detachment will retire through this second line. All retirements can be made gradually, a few of the guns being kept in action until the last moment.

CAVALRY.

Cavalry is now so largely used in the dismounted combat that the action of machine guns attached to them will generally be the same as infantry. There have been in the present war few instances of cavalry charges, even against hostile cavalry. In the case of cavalry engaged against cavalry, the action of the supporting machine guns will be analagous to that of horse

artillery. They will endeavor to take up a flank position, from which they can bring their fire to bear upon the enemy's cavalry while their own cavalry is advancing to the attack. If such an opportunity occurs the machine guns will always have an ideal target in the close-ordered lines of mounted men forming the enemy's force. The guns will have to provide for their own protection, and will often be able to take up a position where they are practically safe from mounted attacks.

OUTPOSTS.

With regard to the employment of machine guns for outpost duty, all that need be noted is that they will often be useful where a picket is watching a road, bridge, defile, or other marked line of approach. In such case arrangements can be made for night firing. Where the outpost line is also intended to be the line of resistance it will be useful to have a larger number of guns with outposts, and to subject in advance the positions to which other guns are to be brought up.

AIR CRAFT AND MOTOR CARS.

Without attempting to do more than give some general indications as to the use of the machine gun with aircraft and with motor cars, something must be said of these recent developments.

The petrol-driven motor car was still in a very elementary stage when it was suggested that in coming wars it would be armoured and armed with machine guns to make dashing raids along the roads on an enemy's front and flanks, or even far in his rear against his communications. It would be something like a land torpedo-boat. Sanguine advocates of the motor car even made forecasts of armoured cars moving across country charging into the midst of hostile troops and destroying them with the allaround fire of machine guns and light quickfirers.

It was some time before the motor car became sufficiently reliable for even much more modest claims on its behalf to be accepted by practical men. But before the Great War began it had been so improved that it had been adopted by most of the armies of Europe for a great variety of purposes, notably for the conveyance of staff officers and messengers, and for

replacing horses by mechanical transport. It has also been used on both sides for the rapid bringing up of infantry, either to reinforce a fighting line or to support the advanced cavalry. With these developments came the armoured fighting car with machine gun armament.

In the British service the armoured car was first introduced by the Navy. It was the result of the occupation of Ostend in the last week of August, 1914, and the establishment of a base there by the Royal Naval Air Service. They found the Belgians in West Flanders were using improvized armoured cars on the roads, and some of these cars proved to be useful helpers in the work of our airmen. A report from Ostend to Mr. Winston Churchill, then First Lord of the Admiralty, led to the immediate organization of the armoured Car Division of the Naval Air Service.

With Ostend and subsequently Dunkirk, as its base, the Armoured Car Division did excellent work in reconnoitering in connecting with the airmen and the cavalry and in driving in the enemy's patrols in the district. The sailors handled the cars like "land torpedo boats," to use the expression of Lord Charles Beresford. Their first exploit was thus officially chronicled in an Admiralty Report, dated September 18, 1914:

"On the 16th instant Commander Sampson, with a small armoured motor car force attached to the Naval Flying Corps, encountered a patrol of five Uhlans, near Doullens, killing four and wounding and capturing a fifth. The British force suffered no casualties."

After these first experiences armoured cars with machine guns were attached to the British forces, not only in France and Flanders, but also in the Gallipoli Peninsula and in Africa. They even took some part in General Botha's operations in German South-west Africa, moving on very different ground, and in one instance bearing the chief share in the repulse of a German attack on the British camp near Wallfisch Bay. In the Gallipoli Peninsula they were used with effect on almost roadless ground.

As a general rule the heavier type of armoured car, in which the gun is permanently mounted in a kind of turret, will operate on the roads. It is obvious that it can give invaluable support

to patrols and detached parties, the men working the gun being themselves fairly safe from rifle and machine gun fire. The drawback of the car is that it is rather a prominent target for hostile artillery. Here its power of rapid movement is its chief resource. The commander of an armoured car has to run the risk of being knocked out by a direct hit, and the further danger of being ambushed, with the road which is his line of retreat being obstructed behind him at the same time. The Germans have repeatedly tried to dispose of a patrolling car in this way, but it is not certain that they have ever succeeded.

There is another type of motor machine gun mounting evolved from the motor cycle and its side car. The gun, tripod, and shield, and a first supply of ammunition, are conveyed in the side car. In this case the motor brings the gun up to the scene of action, and it is then taken from the car and placed in position. It could be actually fired from the side car, but for practical purposes the motor and car should be regarded rather as the means of bringing a reserve of guns at high speed to the place where they are wanted.

Motor machine guns of both kinds have been successfully used to close a gap in a line or support troops who are rapidly driven in. It is obvious that in covering a retreat along a good road they would have a very high value. We may take it that their normal work will be to support patrols and advanced parties, to operate against enemy s patrols, and to form an efficient mobile reserve. The heavy motor car has the advantage that, besides carrying the gun, it can convoy a large supply of ammunition, and is thus an independent unit.

The experience of the present war shows that armoured motor cars can be used even on rough ground where there are no good roads. One of the armoured car squadrons of the Royal Naval Division did good work during the fighting in the Gallipoli Peninsula, and armed motor cars were used in the desert fighting against the Senussi Arabs on the Western front of Egypt in the present year.

It has been proposed that machine guns mounted on motor cars, so as to fire at a high angle should be used against hostile air craft. The proposal seems attractive, because the gun could

follow the enemy's airmen and often move as rapidly as they can. The drawback, however, is that against an aeroplane no serious damage can be done, except by a lucky hit, on a very few points. To kill or seriously wound the airmen, to damage the propeller or the engine, or cut some of the wire stays, might dispose of the aeroplane. But the mere riddling of the planes with bullets makes practically no difference to the flying power of the machine. Against dirigibles the mere firing of machine gun bullets is still more ineffective. In a paper on aerial warfare read by Mr. Walter F. Reid, at the Royal United Service Institution in February, 1911, the lecturer said:

"So far the effect of artillery fire against balloons have been disappointing. Captive balloons, which wait patiently until they are hit, have indeed been brought down, but even if hit they are not necessarily placed *hors de combat.* Colonel F. C. Trollope mentions that only one case occurred of a balloon being hit during the Boer War. A shrapnel shell fired at a range of about 600 yards burst in front of it and made sixty-eight holes. But the balloon took twenty minutes to come down, and was subsequent y mended.*

This incident is quoted here to show how little result can be expected from machine gun fire against the huge aircraft of today. If a captive balloon suffered so little damage from sixty-eight penetrations, it is evident that very little damage would be done to a Zeppelin by a large number of machine gun hits, for these giant airships contain within their rigid case fifteen or sixteen independent gas chambers, and the riddling of one or two of these by machine gun fire would lead only to the slow escape of gas from the damaged compartments, and thus diminish only to a relatively small extent the lifting power of the airship. Machine guns have been used and are being used, in the present war, against aircraft, and no doubt it is useful in so far that it endangers the lives of their crews and forces the airship to keep at a high altitude, but it is clear that the real weapon against the airship is the gun mounted at a high angle and firing shells.

In the early days of aircraft—and these early days were only a few years ago—it was only a small group of enthusiasts

*J. R. U. S. I., June 1911, p. 742.

who ventured to propose that an aeroplane could be armed and converted into a fighting as well as a scouting unit. As late as February, 1911, in a discussion on the subject at the Royal United Service Institution, more than one expert protested against the idea as impracticable. Before the war machine guns had been mounted experimentally on a few aeroplanes.* It is evident that the machine gun, which absorbs its recoil in actuating its mechanism, is the ideal weapon for this purpose. Rifles have been used from aeroplanes, but the machine gun is a far superior weapon, the rapidity of its fire increasing the chances for a really successful hit, and the machine gunner on an aeroplane has a better chance of damaging a hostile aircraft than if he were firing from the ground. He can hope to obtain a position from which he can bring his fire to bear on the vulnerable points in a direction from which more than one of them will be within his possible line of fire, and he can close to an easy range. The discussion of the best method of action—the tactics of the machine gun in aerial warfare—must be left to the airmen. Much interesting information on the subject will no doubt be available when the end of the war comes and they are able to speak freely about matters that are now necessarily kept secret. Meanwhile, in order to give some idea of what aerial fighting is like, we may give an extract from the work on "Aircraft in the Great War," by Claude Grahame-White and Harry Harper, published, in March, 1915:

"There were, at the outbreak of the war, a certain number of French aeroplanes, with motors of 140 h. p., which had machine guns fitted to them. But these craft, owing to their power, and speed and the weight they carried, were difficult to handle; none but an expert would dare to fly them, while the risk of damaging them in alighting was so great, owing to the pace at which they made contact with the ground, that few survived for long the rigours of active service. But the need was such that supreme efforts had to be made; and, before long French pilots were given a biplane, steel-built throughout and with

*In June, 1912, the Lewis gun was well tested from a two-passenger Burgess-Wright aeroplane at the U. S. Army Aviation Station at College Park, Maryland. On November 25 and 26, 1913. Captain K. R. Davis fired a Lewis gun from an aeroplane at Bisley at targets made of sheets two feet by thirty feet.

large sustaining planes, and fitted with a motor of 200 h. p.; and the machine proved so efficient that, in spite of the weight of machine gun, combatant and pilot, it would attain a speed of more than seventy miles an hour. This type of craft, of which as many as possible were sent to active service, has done admirable work. British gun-carrying craft, also, have been greatly improved, thanks to the experience of the war.

"The value of a machine gun in an aerial combat, with its comparatively long range and the concentration and rapidity of its fire, was shown by a fight which took place between a French biplane flown by M. Louis Paulhan, and a Taube monoplane, steered by one of the German pilots. With M. Paulhan was a passenger, whose duty if was to handle the machine gun, the airman contenting himself with the piloting of the machine. They were on a reconnoitering flight, passing high toward the German lines in the direction of Amiens. Below here and there, floated a film of cloud. Suddenly beneath them and to the rear, appeared from the clouds the German monoplane. Paulhan, quick to realize the advantage that his height gave him, swung his machine in a half-circle and dived like a hawk above his foe, bringing himself in one rush to within 500 feet of his enemy. But the German pilot was also a man of action. To continue on the course he had been holding was, he saw, merely to court destruction, seeing that he was in a position of tactical disadvantage. So, making a quick turn, and diving to increase the speed of his machine, he attempted to avoid the encounter and swung away upon his opponent's flank; and, had the weapon of the Frenchmen been a rifle or revolver the German would certainly have escaped. But as it was, opening fire promptly with his machine gun, the passenger in Paulhan's craft, having for the moment a broadside view of his enemy's machine, riddled it with bullets and sent it crashing to earth. A stray shot from the German, fired just before he was put out of action, pierced the petrol tank of Paulhan's machine; but the aviator, flying back towards his own lines, was able to and safely near a French battery.

"In another instance, which revealed the effectiveness of machine gun fire, a German biplane was passing above the lines of the Allies when a French craft rose unexpectedly to meet it. The French pilot steered his machine straight at his antagonist;

while his passenger opening fire with a machine gun, was able not only to puncture the German's petrol tank but to shoot dead his passenger. The German pilot began to plane earthward; but, suddenly owing to a leakage of petrol, the aeroplane burst into flames, and he was burnt to death before he could escape from the blazing craft.*

Machine guns are said to be mounted on some of the German aircraft on a platform on the top of the body of the ship, with a view to supplying fire effect against hostile aeroplanes. Such an armament will give a very limited protection against a daring adversary. Probably the true defense of an airship against aeroplane attack will consist in its being escorted by aeroplanes, as a battleship squadron on the sea has its escort of destroyers.

The most recent and the most authoritative work on aerial warfare is a book published in the present year under the title "Aircraft in Warfare," by Mr. F. W. Lanchester, a member of the Government Advisory Committee for Aeronautics, with a preface by Major General Sir David Henderson, the Director-General of Military Aeronautics. Mr. Lancaster considers the Lewis gun the best existing armament for the fighting aeroplane. He suggests, however, that it may be worth while to devise a machine gun throwing a heavier round-nosed bullet, which at short ranges would do more damage to a hostile aeroplane than the present small-bore pointed service bullet, and that possibly two or three barrels might be combined in one gun to increase the volume of fire during the brief time when the gun is in action in a favorable position. Lewis guns in the air service are fitted with larger sized magazines containing forty-seven cartridges. This is done to save the time that would be spent in changing them for a full magazine. In aeroplane work it is fairly easy to keep the guns cool; the rush of air caused by the motion of the aeroplane gives a superabundant air-cooling action. Even when Maxim guns are used the water-jacket is generally removed.

Guns are now often mounted in aeroplanes in a fixed position without any pivoting. Aim is then taken by directing the aeroplane itself towards the target. The gun is mounted in front of the machine, and fires through the revolving propeller.

*"Aircraft in the Great War," p. 329.

OUR WAR WITH GERMANY.*

V.

(July 18th—August 18th.)

ACTIVE preparation for war, and active talk of peace—chiefly instigated by Germany or German sympathizers—were the dominant features of the fifth month of American participation in the "War of 1917." The preparatory feature included the formal drawing of the numbers of the nine million and more young men throughout the country registered under the selective draft law. This drawing officially determined the order in which those registered would be called for service. In accordance with the lists resulting from this drawing, the exemption boards in the various districts all over the country have been calling men for examination and for presentation of their claims for exemption from service. The work has progressed steadily and without very much friction or opposition—not more than might have been expected from American lack of national discipline and from the American habit of loose-mouthed disregard for law. In a few places, notably in the West and South, opposition to the draft took the form of violence and rioting, resulting in shooting and murder in Oklahoma—a fact most sharply impressed upon Senator Gore, of that State, in the Senate, where he has set an unpleasant mark upon himself by opposition to Administration war measures. But

*Reprinted from the *North American Review* with the Kind permission of the Editor Mr. George Harvey.

on the whole the selection of the new National Army under the draft procedure has progressed very well, and the closing of the fifth month finds something more than one-third of the men for the first 500,000 contingent selected, and regulations issued under Presidential authority for their concentration in training camps beginning early in September.

The formal drawing took place in a committee room in the Senate Office Building at Washington on July 20th. Mr. Baker, Secretary of War, drew the first number, 258, and thereafter the drawing proceeded rapidly until at 2:18 the next morning the last number—3217— was drawn, and the order of calling the registered men in each of the 4557 districts of the country was fixed.

By the end of July the examination boards were ready for their work, the preliminaries had been completed and the formal selection of men for service commenced. In different districts there were many claims for exemption, the ground most frequently urged being that the man was married and that his labor was needed to support his wife. That was the basis of the claim for exemption of Kingdon Gould, grandson of Jay Gould, who had been married but a short time when he was drafted. Mr. Gould, however, permitted his claim to lapse by not filing supporting affidavits within the required period. Charges of fraud in granting exemption were made in some cases, and one New York City exemption board was dismissed. Two of the members of this board pleaded guilty and were sentenced to prison. In general, exemptions were cut down. The New York City board of appeals, headed by former Justice Charles E. Hughes, granted only one appeal out of the first twenty-three heard. It was announced from Washington that the rush of men of serviceable age to be married as a possible means of obtaining exemption would not serve the purpose, for such marriages would not be recognized as sufficient ground for exemption.

While the selection of the first contingent of the new National Army was thus preceding, the formal calling of the National Guard kept pace with it. Under the President's orders the first part of the Guard was called into the Federal service on July 15th, and the remainder on July 25th. This

step was followed on August 5th by the formal drafting of the Guard into the national service, a procedure made necessary by the constitutional limitations on the employment of the "Militia" outside the national boundaries.

Despite the singular infelicity of governmental treatment of the National Guard during the last year, many of the regiments had been recruited up to the full war strength on the basis of the new organization when they were called up. It was the announced intention of the Government to send the Guard to training camps in the South, and the men had been led to expect that they would be in their camps soon after being drafted into the Federal service. But various obstacles interposed. Camps were not ready, and equipment was not available in sufficient quantities. Several of the States had prepared camps which would serve for their men, but the Government has chosen not to make use of them. The result is that at this writing most of the Guard is waiting in its home States for orders to move to training camps. One division has been selected for early service abroad, composed of units from different States.

Contrary to expectation of the Guard, and to assurance from Washington, the official designation of State units has been changed and they will serve in the National Army under national designation. The promise that the Guardsmen should serve in their own organizations has not been regarded, and men have been transferred arbitrarily from one regiment to another, although a strong recruiting argument has been that by enlisting in the Guard, men could choose their units of service and be assured of serving with relatives and friends. It was inevitable, however, that in the organization of a new American army of the proportions intended by the Washington Government, there should be room for some complaint. The calling of the Guard into service has brought the American forces under arms up to more than 800,000, with the first contingent of 500,000 for the new National Army yet to come, and a second contingent of the same size authorized.

With the bringing of so many men into service, the army organization which had been followed in his country since the Civil War has been changed to correspond to the modern or-

ganization employed in the armies of our European allies. It is urged that the new system affords opportunity for more effective use of the men with a smaller number of field officers.

Marching almost side by side with all these efforts to organize a great force of American soldiers for active participation in the fighting in France, has stalked the steady effort of Germany and German sympathizers to induce consideration by the Allies of German peace terms. The new German Chancellor put out his feelers only to meet prompt rebuff. At once, with merely a shift of location and personnel, the effort was repeated from Austria, with Germany immediately announcing her glad willingness to join.

But none of these peace kites of the Teutons, however ingenious of spectacular they might be, served to distract the American Government from the steady purpose with which it entered the war, to make the world safe for democracy. For all these German inspired peace feelers but faintly concealed the German purpose to make a peace on the basis of German victory.

These various efforts did lead, however, to one striking utterance which has helped mightily to crystallize and make visibly clear to Americans and all the world the fundamental purpose of American participation in the war. This utterance came from an Englishman, Mr. Balfour, who as head of the British mission to the United States conversed at length with President Wilson and was familiar with the motives and purposes of the American Government. In a speech in the House of Commons, discussing one of these Teutonic peace feelers, Mr. Balfour stated the American and the Allied attitude in one unforgettable epigram. Germany, he said, must be made "powerless or free" before the world could make with her a certain and secure peace,—powerless for wrong, if still under the iniquitous Hohenzollern domination or free from Hohenzollernism and so safe for association with the rest of the world.

As on previous occasions Germany seized upon the incident of a military success to put out her peace feelers. The Russian offensive in Galicia, which started so well and gave such hopeful promise, and which was the cause of so much rejoicing in this country a month ago, was turned suddenly into dis-

ruption and disaster through the defection and disorganization of the Russian army. Russian troops fled shamefully before the German advance, and all that had been gained was lost again, with more added. This treachery in the Russian army was fostered, if not induced, by German machination, and was the direct precursor of new German peace suggestions.

The American Government, however, was not deceived or induced to waver for an instant. In a speech to the men of the Officers' Reserve Corps training camp at Madison Barracks on July 29th, Mr. Lansing, the Secretary of State, declared that we "must overcome the physical might of German Imperalism by force of arms." He assailed Berlin's perfidy and asserted that Germany covets the United States as a prize. The world's liberty is at stake, he said, and added that "appeals to justice, to moral obligation, to honor, no longer avail with such a Power."

In striking confirmation of this appraisal of German official faith there appeared, on August 5th, in the first published instalment of a book by James W. Gerard, formerly American Ambassador at Berlin, description of his four years at the German capital, a copy of a telegram prepared by Emperor William himself on August 10, 1914, when the war was but a few days old, for transmission to President Wilson. In this telegram the Kaiser said to the President that Belgian neutrality "had to be violated by Germany on strategical grounds." Since that publication Berlin has made some attempt to deny or disclaim the telegram, but the original, in the Kaiser's handwriting, is in American possession.

Preparation for military participation in the war was by no means confined to the drafting of men for the new army and the calling of the National Guard. Additional men and supplies were sent to France and England; work on cantonments and training camps was pushed with vigor, as was that of procuring huge supplies of the various kinds of equipment needed—of ordnance, and of food and clothing for the forces soon to be in the field.

The great aviation bill which had passed the House but was held up in the Senate by the captious opposition of one or two men, was passed by that body on July 21st, in the form in which

it came from the House, so that no conference was necessary. It authorizes the President to make an unlimited addition to the signal corps of the army for aviation service, and carries an appropriation of $640,000,000 for the procurement and maintenance of air machines and for the organization and maintenance of the men. President Wilson signed the bill on July 24th, and active work under its provisions has been going forward since. In a public statement about the bill, however, Mr. Coffin, chairman of the Aircraft Production Board of the Council of National Defense, warned the people of the country against expecting the immediate creation of the immense fleet of aeroplanes of which there had been no little newspaper discussion. He pointed out that such an organization as proposed was not completed over night, nor could any such supply of machines as is desired be manufactured in a week or a month. But he did give assurance that by the opening of the spring campaign of next year the effects of this appropriation bill will be amply manifest upon the fighting fronts of Europe, and that Germany will know that the United States is in the war.

While this military preparation was thus going forward with regular strides, economic preparation was also making some headway. The food control bill, creating a food administration to which the President had announced his intention to appoint Herbert Hoover, reached, at length, the end of its weary and wordy course, through the Senate on July 21st, and was passed by a vote of eighty-one to six. For more than a month the opposition of six men, some of them Democrats and some Republicans, had sufficed to prevent action on this measure of vital importance to the nation and to the war plans of the Administration. As passed by the Senate, the bill carried a number of provisions utterly repugnant to the Government. It created a food control board of three, to be named by the President and confirmed by the Senate. Also it created a joint war board composed of Senators and Representatives ostensibly to supervise the war expenditures of the Government, but denounced by President Wilson as an evidence of lack of confidence in himself. The opponents of the bill were able to prevent its being sent to conference until July 25th, and in conference the fight over some of the Senate amend-

ments was continued for several days. Senator Gore, of Oklahoma, one of the chief opponents of the bill, was chairman of the Senate conferees, by virtue of his position as chairman of the Senate Committee on Agriculture. Conference agreement was reached at length, however, with elim nation of the Senate amendment so objectionable to the President, and this report was agreed to by both houses, the House acting on August 3d and the Senate on August 8th, the senatorial opponents of the bill contributing an additional five days of delay. The measure became law by the President's signature on August 10th, and immediately Mr. Wilson announced the formal appointment of Mr. Hoover to be Food Administrator.

The law prohibits profiteering; makes wastefulness of food a public offense; authorizes the President to license the importation, manufacture, storage, mining or distribution of necessaries; prohibits hoarding; authorizes Government requisition of packing and other plants for the production of necessaries; fixes a minimum price of $2 per bushel for the wheat crop of 1918; prohibits the use of foods, feeds or fruits for the production of intoxicating liquors for beverage purposes and authorizes the President to comandeer liquors in bond or stock for redistillation for Government use if needed for munitions or other purposes. This prohibition of the use of foods, fruits, or feeds for manufacture of beverages has usually been described as a "prohibition" measure. But it will not operate to prevent the manufacture of alchoholic beverages from other materials, and in the opinion of the Bureau of Chemistry of the Department of Agriculture, large supplies of potable alcohol can be produced from materials which cannot be classed as foods, fruits or feeds.

Along with the food control bill, the prior bill known as the "Food Survey" was agreed upon by the conferees and signed by the President. So that the Administration food control legislation has at length been secured. Mr. Hoover has already displayed much activity as Food Administrator. He has announced the organization of a committee headed by President Garfield, of Williams College, and including a number of representative farmers and commercial experts to fix prices for wheat for the 1917 crop, with the intent of Government purchase of the

entire crop if necessary or advisable. He has also organized a Government wheat corporation to handle the wheat business of the Food Administration.

With the Government Food Administration under full headway on an announced policy of reducing the cost of Food to the people of the United States, while at the same time conserving the supply and insuring a surplus for shipment to our Allies in Europe, there has been a reorganization and consolidation of some of the purchasing agencies in a new War Industries Board, auxiliary to the Council of National Defense. This board is headed by Frank A. Scott, of Cleveland, who was chairman of the General Munitions Board, which is absorbed in the new organization. A Central Purchasing Commission has been formed, composed of three members of the War Industries Board and Mr. Hoover. This Commission has announced its intention to protect the general public from extortionate prices, and to work with the Federal Trade Commission and the White House to that end.

Inspired, perhaps, by the fight over the so-called prohibition provision in the Food Control Bill, the Senate on August 1st, adopted a resolution proposing an amendment to the Federal Constitution carrying a genuine prohibition of the manufacture, sale, importation or exportation of intoxicating liquors. This amendment must be ratified by the States within six years in order to become effective. House leaders announced that the resolution would not be acted upon in that body until the regular session next winter.

A number of minor measures of war preparation and of economic importance in domestic affairs passed through the final legislation stages within the month, including the measures increasing the Interstate Commerce Commission and providing for priority in transportation for certain classes of commodities essential to national defense. Other measures advanced toward final enactment, and new projects of legislation include bills providing compensation, insurance, and indemnity for officers and enlisted men of the army and navy for injuries received in line of duty during the war.

The pending measure of chief importance is the so-called "War Revenue" bill, intended to raise about two billion dollars

a year toward war expenses by taxation. This bill was passed by the House weeks ago and has been pending in the Senate Committee on Finance, undergoing a very thorough revision while the Food Control Bill occupied the floor. The Senate Committee was ready to report the bill in the latter part of July when Secretary McAdoo, of the Treasury, startled the Senators by announcing that the Government would need five billions more money than had been authorized. Thereupon the committee withheld the report and prepared to alter the bill so as to raise some hundreds of millions more than had been estimated. On July 27th Senator Smoot made a speech in the Senate in which he estimated the Government war expendi ures for the first year, including loans to the Allies, at seventeen billions.

That same day Mr. McAdoo estimated that the Government requirements for the first year would be $10,735,807,000 which included $2,500,000,000 for fortification and artillery for the army in France. Loans to the Allies would require several billions in addition to the three billions now authorized most of which has been furnished them.

On August 10th Mr. McAdoo raised his estimate of additional funds needed to six billions instead of the five he asked for a few days before. He intimated that the Government contemplated raising 500,000 more men than had been planned at first.

Four days later, on August 14th, Mr. McAdoo submitted a still further estimate in which he again raised the amount needed—this time making it nine billions, which he said should be authorized at the current session and during the regular session next winter. This is to cover the expenditures and loans to the Allies for the first fiscal year of the war.

The War Revenue Bill was reported to the Senate from the Committee on August 6th, and was estimated to provide $2,006,970,000 a year. The committee estimates were that $777,000,000 would come from the income tax; $562,000,000 from the tax on excess profits; and $207,000,000 from taxes on liquors. Senator Simmons, chairman of the Finance Committee, described the bill as a "flexible scientific war tax." Chairman Kitchin, of the House Committee on Ways and

Means, who hails from the same State as Senator Simmons, denounced the Senate revision of his bill as drawn in the interest of corporations and inimical to small dealers and business men. The bill was made the unfinished business in the Senate on August 8th, and the hope of its managers is that it will be passed early in September.

Administrative preparation for the month included a settlement of the quarrel between Chairman Denman of the Shipping Board and General Goethals, which had delayed action on ship construction and disgusted the nation. General Goethals, after consultation with the President, wrote Mr. Wilson on July 21st, offering to resign. On July 24th the President accepted the resignation, and wrote Mr. Denman, calling for his resignation also. Simultaneously he appointed Edward N. Hurley, a Chicago business man and manufacturer, who had been chairman of the Federal Trade Commission, to succeed Denman, and named Admiral W. L. Capps, of the Navy, to succeed General Goethals. Also he accepted the resignation of J. B. White as member of the Shipping Board and named Bainbridge Colby, a New York Lawyer, in his place. Since then the Shipping Board has been a marvel of harmony and activity, and there is every prospect that ship construction will be pushed most energetically. When Mr. Hurley, the new chairman, was asked for an interview, he replied that his business was to build ships, not to talk about them.

Another measure of Administrative preparation, or rather of active economic warfare, has been the work of the Exports Control, provided by a part of the Espionage bill. The Administartion has favored a rigid policy toward neutral countries from which supplies of food or war materials had been going to Germany. This policy has occasioned distress and evoked protest and appeal, without effect. Commissions from different countries, from practically all, in fact, of those affected, have come to Washington and are urging relaxation in their relief. Meantime some seventy Dutch ships, loaded with grain, are held up in American waters for lack of licenses permitting the shipment of the cargoes. The longer this policy continues the more evidences of internal distress come from Germany, and the more frequent become the German feelers about peace.

The close of the month was marked by the return of the Root commission from Russia, with a message of cheer and confidence in the renewal of national vigor and fighting will in that country. At the same time Mr. Root and his colleagues issued a serious warning against the sedition and even treason that stalks but half concealed about American streets and cities.

Simultaneously with the return of the Root commission, there arrived the Japanese commission headed by Viscount Ishii, which comes, according to his announcement, to discuss war measures in the fullest harmony with us and from the point of view of Allied advantage.

As this review month closes, comes the announcement of the formal appeal of Pope Benedict to the world for peace, an appeal accompanied by a statement of the terms upon which His Holiness conceives peace negotiations to be possible. But his terms had hardly been made public when they were denounced in the Entente countries and in the United States as but very thinly disguised from those previously put out by approved German sources. At this writing, no official response has been made to the advances of His Holiness either by our Government or the Allies.

VI.

(*August 18th—September 18th.*)

Because "we cannot take the word of the present rulers of Germany as a guarantee of anything that is to endure," the Government of the United States, speaking through President Wilson, signalized the sixth month of American participation in the war against Germany by refusing to accept the proposition put forth by Pope Benedict as a basis for the discussion of possible terms of peace. Mr. Wilson's reply to His Holiness was the most important, as it was the most interesting, event of the month.

Pope Benedict's proposal contained two propositions both of which President Wilson has now rejeted, and in such manner

as to render it practically impossible ever to revive either of them. His Holiness suggested a consideration of peace terms largely upon the basis of the status quo ante-bellum, and with the present German Government. In a prior public statement President Wilson had destroyed the possibility of peace on the status quo ante basis by pointing to the fact that "it was out of the statu quo ante that the present iniquitous struggle issued forth." He refused to contemplate the possibility of renewing a situation which involved such a dreadful potentiality. In this reply to the Pope the President goes much further and refuses to enter into negotiations with the present rulers of Germany on the frankly stated ground that they are not to be trusted, not worthy of belief or confidence, not responsbile or reliable.

This statement of governmental determination and purpose, with its overwhelming exposition of underlying reason, was received with instant approval by patriotic Americans, and served to render more difficult the continued opposition of the narrowing forces of disloyalty, sedition and pacifism which are operating throughout the country, from Congress down. It was hailed with satisfaction in the countries of our Allies, and accepted generally and officially as their response to the Pope.

As was to be expected such a declaration of the bankruptcy of German national honor and good faith produced a furious outbreak of anger in Germany and among Germanophiles in this and other countries. Just when the chorus of vituperation and denunciation of Mr. Wilson was at its height, Secretary Lansing made public a contribution to the case against German honor which was the text of three telegrams sent by Count Luxburg, the German Minister at Buenos Aires, in code to the Berlin Government. Direct German communication being impossible owing to British control of cables, the German diplomat at the Argentine capital had recourse to the friendly assistance of the Swedish Minister, Baron Lowen, who accepted the German cipher messages and transmitted them as his own to the Swedish foreign office at Stockholm, whence they were forwarded to Berlin.

It was not the mere transmission of telegrams for the German Legation that constituted an offense against neu-

trality. Our Government did that for Bernstorff, until it sent him home. It was the character of the messages themselves that was a crime against humanity, but the kind of crime, unfortunately, that seems only too common among Germans of the ruling class. Count Luxburg coolly informed his Government of the sailing of certain Argentine vessels for European Ports, and of the time at which they were likely to be approaching the European coasts, and brutally recommended that they be sunk so as not to leave a trace of what had happened to them—*spurlos versenkt.* That is, the ships were to be destroyed and the crews and passengers murdered in cold blood.

Count Luxburg used the diplomatic courtesy and freedom of restraint which he enjoyed in Buenos Aires to carry on secret plots for the destruction of the lives and property of Argentine citizens. Incidentally he referred in one of his despatches to the Argentine Foreign Minister as a "notorious ass."

The reception of these disclosures by German officials in Berlin and elsewhere, and by Germans and Germanophiles in this and other countries, is an absolute demonstration of the unerring accuracy of President Wilson's characterization of the German rulers as bankrupt of honor and good faith. There was first denunciation of the American Government for "stealing the German despatches." Then there was furious denunciation of Count Luxburg, not for being guilty of the hideous brutality of his messages, but for being caught and exposed. Not a German voice of prominence or importance has been raised in condemnation of the savage proposals of the German diplomat. The German Government was exculpated by some of its officials on the ground that it was not responsible for the opinions of its agents, and that Luxburg's despatches were only the recommendations of one man. But the German Government is responsible for retaining him in his post after receipt of his uncivilized recommendations, and for failure instantly to disavow his barbarism and recall him from his post. However, the German Government is not repudiating barbarism.

The Argentine Government has dismissed Luxburg and is asking Berlin for an explanation. There is a new crisis in relations between Argentine and Germany. Sweden is making promises of reform, and is asking Berlin for explanation and

disavowal. Sweden disclaims responsibility upon the ground of ignorance of the contents of the Luxburg despatches. The United States Government permitted the sending of German despatches in code by wireless prior to the break of diplomatic relations with Berlin, but it took good care to know the contents of each despatch, and to prevent messages that would violate neutrality.

America's sixth month in the war has been like the others, a month rather of preparation for participation than of actual sharing in real fighting. The daily news reports have been well sprinkled with despatches from London, Paris, and Rome, telling of activity on the part of Americans already abroad, and of the vigorous training of the forces with General Pershing, in France, in anticipation of the day when they shall undergo the fierce test of meeting the German face to face in the field.

Organization of the armies destined to give the actual demonstration to Germany of American physical power, has proceeded regularly and with not more delay, disappointment or failure than was to have been expected from the long refusal of the United States to take thought of her military responsibilities by making preparation or taking training in advance. National Guard regiments from all parts of the country have been assembling in divisions, and undergoing the process of radical transformation from their old organization units into units of the national fighting forces. Delay in completing construction work at different camps has held back the full employment of the Guard in this work, but the promise is that this delay shall be ended in very short order. Similar failure to complete construction work on some of the cantonments assigned to receive contingents of the "selected" men for the new National Army rendered it necessary to hold back the calling of men to the colors in some proportion. Moreover it has now been fully demonstrated to the country that adequate supplies of clothing, uniforms, weapons, munitions and other essential supplies are no more likely to be forthcoming over night than are a million men to "spring to arms" in that period.

The first contingents of the so-called "drafted men" were called to the colors on September 5. In many cities these contingents organized parades, and gave proof of their loyalty and

enthusiasm for the great cause which they serve. President Wilson personally marched at the head of the Washington parade, and distinguished members of his Cabinet, and leaders of the Senate and House of Representatives, trudged down Pennsylvania Avenue from the Peace Monument to the White House with him. Veterans from both sides of the Civil War marched side by side at the head of the column of the new draft

The graduates of the various training camps of the Officers' Reserve Corps had received their commissions just in time to get into active work at the new cantonments receiving the contingents of drafted men and beginning their organization and training. The end of the first week of September found nearly 1,100,000 men under arms in the various American forces.

Meantime procurement of further supplies of the various kinds needed for the proper equipment and maintenance of these men went forward, and was accompanied by further organization of the supply corps, and of the means for procuring supplies.

Less publicity has been given to activities of the Navy Department than to those of the War Department, but that does not prove that the Navy has been less active than the Amry. The announcement is made that Admiral Mayo has been in London for some time, purpose not announced, but obviously connected with naval strategy and employment. The event is seized upon by those favoring an aggressive policy as evidence that the United States is for an attack on the Germans in their various lairs—Heligoland, the Kiel Canal and Zeebrugge.

Secretary Daniels has given more emphasis to his belief that the rapid construction of torpedo boat destroyers is the most effective method of combating the submarine, and the House is soon to take up a bill appropriating an additional quarter of a billion dollars or more for such new vessels. It is announced from the Navy Department that in order to obtain the earliest and most rapid delivery of the new destroyers it will be necessary for the Government to finance concerns willing to enlarge their plants for this work, all the present destroyer building facilities being fully occupied.

While the Navy is thus busy the Army is working on aeroplane construction, and it is announced from Washington, with much satisfaction, that a special aeroplane motor, already designated the "Liberty Motor," has been designed for the equipment of the enormous American aircraft fleet for which Congress appropriated six hundred and forty million dollars a few months ago. But it is reported among those who have been consulted by the Aircraft Production Board about building some of the motors or other aeroplane machinery that not a single contract of any importance has been signed as yet.

Similar delays is reported in getting to work on the plan of the Shipping Board for Standardized construction. Many contracts have been let for ships of one kind and another, some wood and some steel. Commitments for vast sums have been undertaken. But in all the talk of new ship construction emphasis has been laid upon the point that it was the fabrication of standardized ships that was to be the chief factor in solving the submarine problem. It was not until early in September that contracts were let for the first Government fabricating plants.

This month has been one, also, of marked recognition of the essentially economic character of the struggle in which we are engaged. Economic organization has proceeded broadly along two main lines, one for the control of our resources at home, and the insurance of proper supply at proper prices to our own people; and the other for the control of the shipment of our resources away from the country, and the insurance that nothing we raise or manufacture shall be used to furnish any aid or comfort to the enemy. The power to make the first of these purposes effective and energetic comes from the Food Control laws. That for the second comes from the export control sections of the Espionage law. The Food Administration is proceeding vigorously in the effort to make the good promise of Mr. Hoover, the Food Administrator to bring down the price of bread. Difficulty is encountered because a price of only $2.20 per bushel was fixed for the wheat crop of this year. Farmers believe that without control the price would have been higher, and are slow in bringing their wheat to market. The immediate danger is that instead of the price of bread being

lowered there will develop a scarcity of flour and consequently of bread.

On August 20th, President Wilson announced the appointment of Judge R. S. Lovett, head of the Union Pacific Railway, as Federal Agent under the Priority Law, which gives the Government power to determine priority of shipments over railroads. Judge Lovett signalized his appointment by directing forty-six railroads to give preference to shipments of coal to the lakes for the Northwest. The purpose was to prevent the kind of suffering for lack of coal in that territory this coming winter that was endured last winter. The railroads seem to have done their part, but there was no control of the coal after it reached the lakes, and instead of being shipped to the Northwest a good share of it was sent to Canada. Also the Middle West declared it was not getting sufficient fuel to keep its factories running. Then the Exports Administrative Board required licenses for shipments of coal to Canada, so that that leak seems to be stopped.

On August 21st the President announced a schedule of prices which he had fixed on bitumous coal, at the mine. It averaged about a dollar a ton less than the $3 price agreed upon two months ago by Secretary Lane and the leading coal producers of the country in a conference at Washington. That price was repudiated promptly by Mr. Baker, Secretary of War. The President's prices seem more satisfactory to Mr. Baker, but not to the producers, many of whom have been protesting that they are below cost of mining, and will certainly curtail production if the Government insists on them.

Two days later, on August 23d, the President announced prices on anthracite ranging from $4 to $5 a ton at the mine, and named Dr. Harry A. Garfield, President of Williams College, as Fuel Administrator, under the power granted by the Food Control Law. Anthracite dealers, especially retailers, have not conformed to the President's schedule and the cry of coal shortage begins to come up from various parts of the country.

The wheat control power of the Food Administration became effective on September 10th. Mr. Hoover is putting a system of licensing mills and other handlers of grain into effect,

and announces that he expects a reduction of $3 a barrel on flour, which should save the people of the country thirty millions a month.

In a public statement at Washington Mr. Hoover said he saw no hope for reducing the price of meat and pointed out that the supply is too small for the normal demand. Nevertheless it is reported from Washington that he is planning to put the meat under license. This is under consideration as a means of eliminating speculation.

The Food Administration also expects to license the sugar industry, and has issued fervent appeals to the people to save sugar. Meantime the Department of Agriculture is conducting the national survey of food which was authorized under the first of the food control laws.

While these measures of domestic control are being taken the President has extended the power of the Exports Administrative Board, and that body has made it clear that it does not propose to permit anything to go out of an American port which might be of the least service to Germany. For instance a large number of Dutch ships, loaded with grain and fodder, have been laying in American ports for weeks seeking permission to sail. Their grain cargoes, at least, are owned by the Dutch Government. Recently agreement was reached by the Dutch negotiators with the Food Administration for the release of about thirty of these ships, on condition that two-thirds of their grain should go to the relief of Belgium. But the Exports Board held up the permits because of the fodder, and ships are still in American waters. No adequate assurance was forthcoming from the Dutch that that fodder would not find its way to Germany, or that the produce of the Dutch cattle it might feed would not get into Germany.

It has been made clear that there shall be no American food for neutrals in Europe or elsewhere who help supply food or other needed articles to Germany. Also the President has put shipments of gold and silver under control of the Exports Board, which means that they cannot go without license. And in most cases they will not get the license. Spain has been taking millions of gold from the United States although she has a heavy adverse trade balance with us. It costs ten per cent.

to ship gold to Spain from New York now, five per cent. for freight and as much for insurance. But Spain has taken more than fifty millions recently, and it is suspected in Washington that some submarine method has been found for getting part at least of this gold to Germany.

Secretary McAdoo has asked Congress to give the Government control also of imports, and the intimation is made that the Government is planning to prevent shipments of supplies to Germany from South America.

Price fix ng and exports control have their corollary in a new purchasing agency established in Washington to do the purchasing of supplies for the United States, Great Britian, Russia and France, with Italy expected to come in very soon, and possibly others of our Allies.

Labor troubles, strikes and walk-outs have made their inevitable appearance, as they always do in periods of prosperity and high wages. Much effort has been made toward reaching adjustment of such differences and toward finding a means of avoidance and settlement in future during the war. As far as shipping is concerned an agreement which it is hoped means settlement was reached under which an "Adjustment Commission" was appointed by the President, consisting of Mr. V. Everit Macy, President of the National Civic Federation, as Chairman, with representatives of the American Federation of Labor and of the United States Shipping Board. A representative either of the War Department or of the Navy Department will sit with the commission when it considers matters affecting either of those departments. Workmen at the League Island Navy Yards sent a delegation to Washington to pledge their loyalty and assure the Government against strikes on national war work.

The Senate spent most of the month on the War Revenue bill, which it had given many weeks to rewriting after receiving it from the House. A hard fight was made by about twenty Senators, of the so-called "radical" element, to increase the rates of taxation on personal incomes and on war profits. The cry was to "conscript wealth" as men had been conscripted. Scores of varying amendments were submitted and all defeated. But the Finance Committee yielded in part to the demand for

greater taxation of wealth and itself proposed an amendment to its own bill, raising by some hundreds of millions the amount estimated to be raised from war profits. The bill was passed by the Senate on September 10th, by a vote of sixty-nine to four. It is estimated to yield $2,406,670,000, chiefly produced by incomes ($842,200,000), war profits ($1,060,000,000), and distilled spirits ($218,000,000), this last estimate being a public adm ssion that the so-called "prohibition" feature of the Food Control bill was a fake as a prohibition measure. All consumption taxes were stricken out by the Senate, but a few special taxes were provided, estimated to raise $141,750,000. The bill is now in conference.

The Senate also passed the Enemy Trading bill, previously passed by the House, with an amendment requiring German language newspapers in this country to print translations of political and editorial articles in parallel columns. At the same time the Senate passed a resolution permitting the drafting of subjects of our Allies for our military service. It is estimated that this places more than a million and a quarter of additional men at the disposition of the Government. There are 87,000 enemy aliens of military age in the country.

The House occupied itself with a bill providing a system of insurance for officers and men of the American service for the benefit of their families, at low cost. President Wilson expressed himself as warmly in favor of this bill. As originally brought up in the House it set a limit of $5,000 on policies. The President said he wished it were twice as much, and it was made so. Criticism of the provisions of the bill has come from some of the prominent insurance men of the country, but not of the principle. One of the purposes of the measure is to provide a system that shall do away with the present pension system, as applicable to this war, or greatly reduce its operation. This bill was passed unanimously on September 13th.

The House also passed unanimously a bill authorizing the issue of more than eleven and a half billions of four per cent. United States bonds. The expansion of debt is really not as great by this bill as it seems, for more than half a billion of the new bonds will take the place of those authorized for different purposes not necessarily connected with the war, such as the

Mexican border service of last year, and others. Also three billions cover merely the authorization to raise the interest of that amount of bonds authorized last April from 3½ per cent. to four per cent., and four billions are for loans to our allies.

The House has also passed another huge appropriation bill, carrying more than seven billions of dollars and the Army, Navy and Shipping Board are not through asking for more. The Shipping Board wants another billion. The Navy wants hundreds of millions. There is talk of more hundreds of millions for aeroplanes, with not even a contractual start made yet on expending the first six hundred and forty millions.

Representative Fitzgerald, chairman of the House Committee on Appropriations, in a statement in the House on September 14th, placed our expenditures for the first year of the war at eighteen billion dollars, as compared with a total of $21,000,000,000 by Great Britian for the three years of the war, fifteen billions by France, a similar amount by Russia, and only three billions by Italy. Our Loans to Allies aggregated close on to the three billions at first authorized, as this was written. Mr. Fitzgerald's speech adds emphasis to the mass of other evidence as to the value of pre-war preparation. A huge percentage of our present cost is due to the failure to make the preparation in time and the extra expense of making it now under adverse and costly conditions.

This work by the Executive and Legislative branches of the Government has been more or less public and spectacular, but the work of the Judicial branch has been no less effective. In a single nation-wide raid on the offices of the I. W. W. an effective check was put upon the seditious work of that disloyal organization, and evidence of value in other ways was accumulated. A raid on a German newspaper in Philadelphia produced similar results. The curbing of sedition and disloyalty, whether in newspapers, alleged labor organizations, or among soap-box orators on street corners, is progressing, and thus, belatedly but energetically, the United States is getting ready to show some real participation in the war.

VII.

(September 17th—October 17th.)

At three o'clock on the afternoon of Saturday, October 6th, the first session of the Sixty-fifth Congress adjourned without day. It was just six months, to a day, from that April afternoon when Pres dent Wilson attached his signature in approval to Public Resolution No. 1, the first act of this Congress, which declared war against the Imperial German Government. No other session of the American Congress ever transacted so much business, or business of so great importance to the nation and the world, as this. In those six months more provision for military resources of the country, was made than in all the previous history of the nation, whether the standard of comparison be the character of the legislation enacted or the amount of money appropriated and of expenditure authorized.

This session, for the first t me in the military history of the United States, applied the principle of universal military service at the opening of a war, and enacted the so-called "selective draft" law under which the first units of the new National Army are now organizing and receiving their first training.

It established beyond a question the paramountcy of the nation in the dual system by extensive exercise of the power to control or take over enterprise and industry, including land and water transportation; fix prices, even of agricultural production; direct operations; assign priority of production and transportation, and otherwise generally perform the normal functions of owner and master.

It provided for financing these new operations of government on a scale and with a liberality previously unheard of, assuming freely the enormous burden of furnishing the chief financial support to our Allies while at the same time preparing and maintaining, on our own part, fighting forces, land and naval of colossal proportions.

It provided for the equipment of these land and naval forces with all fighting material of the most effecrive design and in unlimited quantities, including an air fleet calculated

by itself to outnumber the combined establishments of our enemies, as well as now naval construction that will make the United States Navy "incomparably the strongest afloat" to use the language of the Secretary of the Navy.

It took a long step toward the practical solution of the much debated question of the rehabilitation of the American Merchant Marine by authorizing the expenditure of nearly two billion dollars for the construction, charter or requisitioning of vessels by the United States for the merchant service.

Much public criticism attended the labors of the session, evoked chiefly by delayed action on measures strong in popular support as necessary to the successful prosecution of the war. Yet these delays were almost all caused by a small group of men in the Senate, whose activities in opposition to the war finally culminated in a wide-spread and growing demand for their expulsion from the Senate or other punishment, as teachers of sedition and disloyalty.

President Wilson, who had made clear, long ago, his own opinion of the obstructive tactics of this group, sent a final message to Congress strongly praising the work it had done, and expressing the view that it had been done thoroughly and "with the utmost dispatch possible in the circumstances or consistent with a full consideration of the exceedingly critical matters dealt with."

War measures that occupied the attention of Congress during the last month included the second Urgent Deficiency appropriation, carrying approximately eight billions for war purposes of one kind or another; the War Revenue bill, designed to raise about two and a half billions a year by taxation; the Enemy Trading Act; an act providing for insurance and compensation for injury or other disability, for soldiers and others in the military service, and a number of acts of lesser importance. This latter category includes an act placing control of the sale, distribution and storage of explosives under the Bureau of Mines; an act permitting National banks to issue notes of $1 and $2 denominations; an act giving the Shipping Board power to suspend the navigation laws and permit foreign vessels to enter the coastwise trade, except to Alaska, during the war, and an act covering the repatriation of Americans

who have joined foreign armies to fight against Germany. There was also an act restoring the grade of General in the army, last held by General Sheridan. Under its authority the President has already promoted General Pershing, in command of the American forces in France, and General Bliss, the new Chief of Staff.

This session made what members of the Administration and all other Americans hope will be a record for all time in the expenditure of money. The total appropriations—almost wholly for war— for this fiscal year was $16,901,986,814. Besides this it authorized contract obligations calling for $2,511,553,925 more. The regular session of the last Congress, last winter, had provided appropriations for this fiscal year before we entered the war, aggregating $1,997,210,200, which included $517,000,000 for the navy and $273,000,000 for the army. Thus the total of appropriations and contract authorizations for the fiscal year 1918, by the two sessions of Congress, is $21,390,730,940, to which the minutely accurate statisticians of the Treasury and Congress add the important detail of forty-six cents.

This inconceivable sum includes $7,000,000,000 for loans to our Allies. The first deficiency bill of the session carried authorization for three billions for our Allies, and that limit has nearly been reached. The loan authorization in the second bill was four billions. Loans are made to the Allies at a rate averaging pretty close to twenty million dollars a day. Exclusive of these loans our total of appropriations and contract authorizations for this fiscal year is $14,390,730,940, which ought to be somewhere in the neighborhood of our total war bill for the first year. But there are still eight and a half months of the fiscal year to run, and during seven of them, Congress will be in session again, ready to respond, as it has done heretofore, to every call for war money from any department of the Government.

Congress did not spend much time over appropriations, but it gave months to consideration of the revenue bill, and in the end put forth to measure that has aroused wide-spread and bitter criticism because of some of the provisions of the war profits and income tax sections, and of the special favor

shown to Congressmen themselves. The tax bill passed the House on May 23d, but did not come to a vote in the Senate until September 10th. The conferrees wrangled over its provisions for nearly three weeks, and rewrote several sections entirely. The tax on incomes and on excess profits furnished the chief points of controversy, as had been the case in the Senate. Also the postage rates on second class mail matter, including magazines and newspapers, caused great argument. It was not until October 2d, that the Senate agreed to the conference report, and the next day the President signed the bill. Then it was discovered that the conferrees had written in a special excess profits tax of eight per cent. on the salaries or incomes of professional and salaried men in excess of $6,000 but had been careful to provide that it should not apply to members of Congress. Some Congressmen have attempted to justify it on the ground that it is a sort of war excess profits tax and that such taxes should apply to professional and salaried men and to farmers as well as to manufacturers and business men.

The Enemy Trading Act which passed the House on July 11th, and the Senate on September 12th, came from conference on September 21st, was agreed to quickly by both houses and was signed by the President on October 6th. This law forbids the trading with or transportation of an enemy or ally of an enemy, or the transmission of communications to or for such person. Certain permissions may be made under license. Section eleven confers upon the President the same power over imports into the country that Title 7 of the Espionage Act gives him over exports. This act also forbids the publication of war comment in foreign language newspapers except under conditions tantamount to license by the Postmaster-General. It is probably the most drastic legislation enacted in the United States since the Embargo Act under President Jefferson. Under it the Government is empowered to assume a minutely detailed control of American trade, especially overseas.

On October 4th, the House passed a bill to protect persons in the military service in their civil rights while away from home on duty. It contains a section forbidding the eviction of the family of a soldier for non-payment of rent during the war,

where the monthly rental is less than $50. This bill was not acted upon by the Senate, but will come up at the next session.

Just before Congress adjourned there was passed a resolution providing for a test by a board of five scientists of an invention by a Boston Armenian. It is a device for developing energy, for which the inventor makes marvelous claims, such as, for instance, that it will drive a ship across the Atlantic without fuel; that it will propel aeroplanes and do other similar work. If the five scientists certify that it will do what is claimed for it, Congress will buy it for the Government. Its sponsors declare that it will end the war alone—if it works.

President Wilson's reply to the peace proposals of the Pope was the oustanding feature of the sixth month of America's participation in the war. Mr. Wilson rejected Pope Benedict's offer because, he said, "we cannot trust the German Government." The Germans accept the Pope's proposition because "with deep rooted conviction we agree to the leading idea of Your Holiness that the future arrangement of the world must be based upon the elimination of armed forces, and on the rule of international justice and legality. We, too, are strongly imbued with the hope that a strenghtening of the sense of right would morally regenerate humanity." A statement like that from the German Government at a time like this illumines, as would the beam of a giant searchlight, the President's declaration that we cannot trust what Germans say.

Mr. Wilson gave renewed assurance of his determination to fight the war through to complete victory on October 8th, when he received at the White House a delegation from the newly organized League for National Unity, and told them that the war should end only when Germany is beaten, and the rule of autocracy and might is superseded by the ideals of democracy.

About the middle of September the fact was permitted to become known that the President had selected his friend and personal adviser, Colonel House, to organize and supervise the collection of material which will be needed for the effective equipment of the peace commissioners of the United States, when the time comes for their appointment. Other belligerents have been busy for months gathering the economic and other data which their commissioners will need when they come to

meet at the conference table, and it is important that the American commissioners shall have the fullest information available, not only upon the points to be covered by their own instructions, but also upon any points that may be brought up by other commissioners, allied or enemy.

Progress in organization and equipment of the fighting forces for actual participation on the battle fronts reached the point in this seventh month of our war where it began to be more easily realizable generally that we are really about to contribute in substantial fashion to the military overthrow of Germany. More and more men called under the selective draft were assembled in their training camps. Cantonments and camps for the National Guard units were brought nearer to completion. The reorganization of the Guard regiments upon the new army plan was begun. Equipment of all kinds for the men was ready in increasing supplies. On October 10th, more than 461,000 men were in the various camps for training, and over 13,000,000 articles o' equipment of one kind and another had been provided.

The Navy, which by its patrol and convoy work has been doing effective actvie service from the start of our war, has been increasing its participation abroad, while at home it has been increasing its capacity to participate. On October 9th, Mr. Daniels announced that contracts had been let to five concerns for destroyers to cost $350,000,000, all to be of the largest, newest and most efficient type. At the same time the Secretary announced that the Navy is building 787 vessels of all classes and types, from superdreadnaughts to submarine chasers. The total cost of the building programme is $1,150,400,000. Admiral Mayo returned from his conferences with allied naval men abroad, but no announcement was made as to what he had accomplished.

A report from the Shipping Board on September 26th, showed that the Emergency Fleet Corporation then had under contract 353 wooden vessels, of a total deadweight tonnage of 1,253,900; fifty-eight composite ships aggregating 207,000 tons, and 225 steel ships aggregating 1,663,800 tons. It had requisitioned ships then building for private owners in different American yards numbering 403 and aggregating more than

2,800,000 tons. This was a total of 1,039 vessels aggregating 5,924,700 deadweight tons.

In addition there were 458 American ships then in service, with aggregate tonnage of 2,871,359 and 117 German and Austrian vessels seized or obtained under charter or by purchase, aggregating 700,285 tons. When the building program thus reported is completed the American fleet would have 1,614 vessels of tonnage aggregating 9,496,344, less submarine and other losses meantime. The appropriation bill then pending, however, contained authorization for a further construction programme of about 5,000,000 deadweight tons, so that the United States has a merchant fleet of upwards of fourteen million tons in sight. When the war began in 1914, our ocean going merchant tonnage was 1,614,000. The Shipping Board estimate of available British tonnage at the end of September was 14,500,000. British announcement of submarine losses for the second week in October was the smallest since the ruthless campaign opened in February 1. It was accompanied by the extremely significant announcement that British new construction for the week exceeded the losses. Taken together, these facts show that the time is very close at hand, f not already here, when the definite defeat of the submarine can be announced.

On October 15th, the Shipping Board requisitioned all American vessels in service, directing that they be continued in service by their owners or charterers for Government account, and at rates fixed or to be fixed by the Government, with an allowance of ten per cent. commission for owners' services. Freight rates were sharply cut by this move, and it was expected that relief would be afforded to the South American trade which had suffered greatly from excessively high freights from American ports.

Governmental price fixing for the month had to do chiefly with coal and steel. Dr. Garfield, the Fuel Administrator, issued several reassuring announcements that there was no cause for or prospect of fuel famine. Nevertheless, loud and frequent complaints came from coal producers and consumers both, one that prices fixed were below cost of production, and the other that despite the figures of larger production than in 1916

coal was not to be had in the localities of the complainants. On September 30th, Dr. Garfield issued new orders increasing prices in certain bituminous districts, and reducing some anthracite prices. He also fixed the retailers' margin at that of 1915 plus thirty per cent. for increased costs, or at that of July, 1917. No generally perceptible effect on retail prices followed.

Steel committees spent a good deal of time in Washington in consultation with the War Industries Board, and on October 10th, a new range of price agreements was announced with the approval of the President. It is anticipated that oil prices will come next.

The Exports Administrative Board did a good deal during the month to smooth out causes of friction in the exports control, many of which were of minor importance and due to misunderstanding or regulations. On October 2d, the Board announced a long list of articles and countries on which no liscense would be required. It was made increasingly evident that the chief purpose of the exports control is to prevent supplies of any kind reaching the enemy from this country or from any other if it can be helped. Great Britain is coöperating in this plan, and on October 2d, the British Government laid an embargo on all shipments for Norway, Sweden, Holland and Denmark, except printed matter and personal effects accompanied by their owners. Two days later the Exports Administrative Board stopped the furnishing of bunker coal to neutral ship bound to neutral ports bordering on Germany. If Northern Europe wants to trade with South American neutrals for supplies for Germany it must find bunkers elsewhere than in the United States.

On October 14th an executive order by the President was made public reorganizing the Exports Administrative Board as the War Trade Board, and charging it with the duty generally of administering the Enemy Trading Act and the new control of imports. This order also delegated certain other war powers of the President to different departments.

The month's activities included a number of interesting revelations by the State Department and other sources concerning German intrigue, spy work, subornation of treason, in-

stigation of sabotage and such things. On September 21st, Secretary Lansing made public a telegram sent by Ambassador Bernstorff to the Berlin Government on January 22d, just before our break with Germany, asking authority to pay out "up to $50,000" in order "as on former occasions to influence Congress through the organization you know of, which can perhaps prevent war." Mr. Lansing's information proves that when von Bernstorff sent that message he knew, by receipt of the Zimmermann instruction about Mexico and Japan, that Germany intended to renew the U-boat campaign.

On October 3d, Mr. Lewis, the Attorney General of New York State, announced some of the results of an investigation which he made, at the request of the French Government, into the activities in New York last year of Bolo Pasha, of Paris, now under arrest there as a traitor and German agent. Mr. Lewis showed that Bernstorff had cabled his government for $1,700,000, which Berlin furnished, and which the ambassador paid to Bolo as a corruption fund with which Bolo was to procure French newspaper support for Germany, especially in the Paris *Journal*. Several code messages passed, apparently through the good offices of some friendly diplomatist. In these messages the sums actually desired were divided by one thousand for code purposes.

Coupled with these disclosures of German intrigue there has been a steady rounding up of enemy aliens and sedition spreaders, which has aroused wide-spread interest and indignation throughout the country. Several hundred enemy aliens were arrested in one raid in and about New York City, and fifty or more additional I. W. W. agitators gathered in.

As the review month closed, a special outburst of indignation was manifesting itself against Senator La Follette and some of his colleagues who were held responsbile for undue delay and obstruction of necessary war legislation in Congress. On September 20th, Senator La Follette delivered a speech at St. Paul, Minn., in which he inferentially defended the sinking of the *Lusitania*, opposed the war and said things which led to his being accused before the Senate by the Minnesota Public Safety Commission as a "teacher of sedition." The Minnesota Commission petitioned the Senate to expel him. Other simi-

lar petitions for action against La Follette, Stone, Gronna, Hardwick, and Reed, the chief obstructionists, poured in, until the Committee on Privileges and Elections took formal notice of the La Follette and Stone cases. It acquitted Stone, pointing out that although he opposed the declaration of war he has kept still ever since and voted for all the Administration war measures. But it is investigating the St. Paul speech and will report on that at the next session.

The incident shows that the business of spreading sedition in the United States is becoming unpopular. Under the Enemy Trading Act the Postmaster-General announces that he will not permit foreign language newspapers to wage campaings against conscription, or enlistments, the sale of bonds or collection of revenue, or anything tending to hamper the Government in its war work or improperly to attack our Allies.

Strikes and labor troubles marked the entire month, the chief demands coming from shipyard worker, coal miner and railroad men. Strenuous efforts by government mediators, and direct personal appeals by the President himself, were not sufficient to prevent considerable curtailment of production. The month closed with threats of a general railroad strike for wages.

In the latter part of September, Secretary McAdoo, of the Treasury, announced the flotation of the second installment of the Liberty Loan of 1917 beginning on October 1st. Bonds to the amount of $3,000,000,000 are offered for subscription, but it is understood that in case the loan is overscribed half the over subscription will be allotted, and the bond campaign is aimed at a subscription of at least five billions, which would mean an issue of four billions. The same kind of an intensive campaign is going on that marked the exceedingly successful flotation of the first loan, and the prospect is, as this is written, that it will be similarly successful.

VIII.

(October 17th—November 14th.)

IN the eighth month of our participation in the war against Germany, the first casualties in action occurred among American troops occupying position in the front line trenches in France. The first news that our men had been in a fight with Germans came from Berlin.

The next day Washington told what had happened. It appeared that for some time detachments of American troops, undergoing training for the real fighting which is to come, had been getting experience by brief turns in the front line trenches. One such detachment occupied a salient in the French line. A German raid was made on that salient, preceded by barrage fire which cut off the detachment of Americans from their supports. It is reported that our men fought with gallantry. Three were killed, five were wounded and eleven were captured. A cynical article in the *Lokal Anzueger* of Berlin welcomed these first Americans to Germany and announced the readiness of the Germans to receive many more.

The American navy had already begun to pay the inevitable price for its active share in hunting down the underwater hell-hounds. On October 16th the torpedoboat destroyer *Cassin* was torpedoed by a submarine while on patrol duty. Gunner's Mate Ingram was killed and five men were injured, but the vessel was not lost. Through the skill of her captain, Commander Vernon, she was brought to port safely.

The next day the Army transport *Antilles*, returning from France with 237 men aboard, passengers and crew, was torpedoed, very early in the morning, despite the vigilance of her convoy, and sunk. Sixty-eight men were lost with her, including some of the navy guard, some of the returning soldiers and some of the crew. Among those lost were two army sergeants, one corporal and nine privates, all with German names, and some of whom had parents or other relatives living in Germany. In the official announcement of the loss there was no comment from Washington as to why so large a proportion

of the soldiers returning from France should be men with German names.

On October 26th the Navy announced that its total of casualties from the commencement of its participation in the patrol work, shortly after the American declaration of war, down to date, was one officer and twenty-seven men killed and five made prisoners. Ten days later announcement was made that the patrol boat *Alcedo* had been torpedoed and sunk and that one officer and twenty men were missing.

Washington announces that more than a hundred thousand American soldiers are now in France. It required two hundred and fifty thousand tons of ships to transport them there and it requires the entire service of an immense fleet to maintain them. As our forces in France increase in numbers the demands upon our small supply of tonnage also increase. Despite all the difficult es the Shipping Board has found a way to respond to the calls for help from France and Italy. On October 19th it was announced that 250,000 tons of shipping would be allotted to France in return for which French sailing vessels would come into our coastwise service. A week later arrangements were made to let Italy have the use of twenty-five steel vessels aggregating about a hundred thousand tons. Meantime steady effort was made to speed up construction in American yards. Delays and hindrances were threatened, and in some cases actually caused, by strikes and other labor troubles. The month saw the full influence of the Government constantly exerted to the utmost to arrange such disagreements and prevent interference with work. On November 11th a reorganization in the Emergency Fleet Corporation, which is charged with the construction work, was announced. Admiral W. L. Capps, who succeeded General George W. Goethals as the General Manager of the Corporation had worked himself into ill health in the attempt to carry the tremendous burden alone. Mr. Charles A. Piez, a very successful business man, of Chicago, was selected vice-president of the Fleet corporation and put in charge of the actual construction work. At the same time a production committee, composed of engineers, was created to assist in speeding up the enterprise and cutting out red tape.

While these efforts were making the Shipping Board was also in negotiation with representatives of the Japanese Government for assignment of a certain portion of the Japanese merchant fleet to the Atlantic trade to help out Japan's Allies in their great need for shipping. In the end an agreement was made whereby Japan is to get a certain amount of American steel which she greatly desires and is to make a readjustment of her shipping schedules that will contribute to the relief of her allies.

This shipping question with Japan was coupled pretty closely, apparently, with the chief matter concerning which the Ishii special mission came to the United Stated to negotiate. On November 6th, Mr. Lansing, Secretary of State, announced that an exchange of notes between himself and Viscount Ishii had been effected on November 2d, the effect of which was to define the attitude of the two Powers with respect to China. The United States by this exchange, recognizes the validity of the Japanese claim to a "special interest" in China, and joins with Japan in denying for itself any purpose of infringing Chinese integrity or sovereignty, while at the same time declaring again for the maintenance of the "Open Door" in China and the principle of the equal opportunity of all nations in the commerce of China. The two Governments will oppose the infringement of Chinese independence or sovereignty by others. A complete agreement for naval coöperation in the Pacific was also reached.

In the eighth month of American participation in the war against Germany the first real pinch of food shortage began to make itself felt among the American people—not in the sense of hardship through mounting prices, but in the actual shortage so that persons with money to pay any kind of price within reason were unable to buy because the dealers had none to sell. This condition manifested itself in the case of sugar and immediately the effect of the government control and price fixing was felt. At first some dealers who had sugar in stock when the shortage became apparent were inclined to let the law of supply and demand have free play and charge what the traffic would bear for their sugar. But very stern warnings

came from Washington to the effect that that sort of profiteering would not be tolerated.

Mr. Hoover announced that the licensing system would seek to limit prices to cost plus a reasonable advance; to keep food commodities moving; and to prevent speculation by limiting future contracts.

While the Food Administrator was busy with the first food shortage, Dr. Garfield, the Fuel Administrator, was being harassed on all sides by difficulties of every kind. Owners of coal mines protested that government prices were lower than costs of production. Miners demanded higher wages and threatened strikes to enforce their demands. In some places operators shut down their mines. In other places miners struck and forced a shut-down. Dr. Garfield issued repeated warnings, increasing in severity, to both men and operators, against strikes and lock-outs, and against sales at prices above those fixed by the President. State Fuel Administrators were instructed to seek evidence on which to base prosecutions of dealers selling above the schedule. In the effort to keep the mines working and production at a maximum John P. White, President of the United Mine Workers, the miners union, resigned and was appointed assistant to Dr. Garfield. Here and there stores of horded coal were uncovered, and orders were given preventing additional shipments to concerns which had large supplies in reserve. The total production for this year is greater than for the corresponding period of last year, but is still not up to the maximum possible.

The labor difficulties which marked the shipping and coal situation were manifest also in other industrial lines, and, under the inspiration of the I. W. W. organization, were especially active in western farming districts. The activities of the I. W. W. led to riotous performances in different States.

Governmental efforts to prevent labor disturbances from interfering with essential production culminated in a trip by President Wilson from Washington to Buffalo, where he addressed the annual convention of the American Federation of Labor. He expressed contempt for the pacifists who are seeking to bring about an immediate peace and told the workers that they must sink all differences and give full aid.

This eighth month of our participation in the war was marked by a great American success in the second Liberty Loan. The subscriptions closed on October 27th, but the full amount was not known until November 7th, they came so rapidly and from so many sources at the close of the drive. The mark that had been set for the campaign was an issue of $3,000,000,000, but it had been announced that bonds to the extent of one-half of any over-subscription would be allotted, and it was hoped that the over-subscription might reach to $2,000,000,000, making the total of subscriptions $5,000,000,000.

The second Liberty Loan campain was well organized and the drive reached its climax right at the last. It produced a total of more than 9,400,000 subscribers, who bid for the inconceivable sum of $4,617,532,300 of the new four per cent. bonds that are not exempt from taxation, except in amounts under $5,000. As half of the subscriptions above three billions will be allotted, this means a total issue of the second loan of $3,808,766,150. At a favorable rate of exchange, under present circumstances, that would be almost 23,000,000,000 German marks, or twice the total subscriptions to the most successful loan issued by the German Government.

Preparation of the national army to take its share in the actual fighting proceeded steadily throughout the month. It involved not only the training of new officers in their various schools, and of the men in their camps, but the careful preparation for further calls under the selective draft registration. Provost Marshal General Crowder has worked out a graded system for selecting the men of the new contingents. He sent a questionnaire to all the 9,000 000 men on the registration lists calculated to develop full information concerning their situation, so that they may be properly classified. The local board, upon examination of the returns, are to assign the men to one or another of five clases. These classes are as follows:

CLASS I.

(A) Single man without dependent relatives.

(B) Married man, with or without children, or father of motherless children who has habitually failed to support his family

(C) Married man dependent on wife for support.

(D) Married man, with or without children, or father of motherless children; man not usefully engaged, family supported by income independent of his labor.

(E) Unskilled farm laborer.

(F) Unskilled industrial laborer. Registrant by or in respect of whom no deferred classification is claimed or made. Registrant who fails to submit questionnaire and in respect of whom no deferred classification is claimed or made.

All registrants not included in any other division in this schedule.

CLASS II.

(A) Married man with children or father of motherless children, where such wife or children or such motherless children are not mainly dependent upon his labor for support for the reason that there are other reasonably certain sources of adequate support (excluding earnings or possible earnings from the labor of the wife) available, and that the removal of the registrant will not deprive such dependents of support.

(B) Married man, without children, whose wife, although the registrant is engaged in a useful occupation, is not mainly dependent upon his labors for support, for the reason that the wife is skilled in some special class of work which she is physically able to perform and in which she is employed or in which there is an immediate opening for her under conditions that will enable her to support herself decently and without suffering or hardship.

(C) Necessary skilled farm laborer in necessary agricultural enterprise.

(D) Necessary skilled industrial laborer in necessary industrial enterprise.

CLASS III.

(A) Man with dependent children (not his own) but toward whom he stands in relation of parent.

(B) Man with dependent, aged or infirm parents.

(C) Man with dependent, helpless brothers or sisters.

(D) County or municipal officer.

(E) Highly trained fireman or policeman, at least three years in service of municipality.

(F) Necessary Custom House clerk.

(G) Necessary employe of United States in transmission of the mails.

(H) Necessary artificer or workman in United States armory or arsenal.

(I) Necessary employe in the service of United States.

(J) Necessary assistant, associate, or hired manager of necessary agricultural enterprise.

(K) Necessary highly specialized technical or mechanical expert of necessary industrial enterprise.

(L) Necessary assistant or associate manager of necessary industrial enterprise.

CLASS IV.

(A) Man whose wife or children are mainly dependent on his labor for support.

(B) Mariner actually employed in sea service of citizen or merchant in the United States.

(C) Necessary sole managing, controlling or directing head of necessary agricultural enterprise.

(D) Necessary sole managing, controlling or directing head of necessary industrial enterprise.

CLASS V.

(A) Officers, legislative, executive, or judicial, of the United States or of State, Territory, or District of Columbia.

(B) Regular or duly ordained minister of religion.

(C) Student who on May 18, 1917, was preparing for ministry in recognized school.

(D) Persons in military or naval service of United States.

(E) Alien enemy.

(F) Resident alien (not an enemy) who claims exemption.

(G) Persons totally and permanently physically or mentally unfit for military service.

(H) Persons morally unfit to be a soldier of the United States.

(I) Liscensed pilot actually employed in the pursuit of his vocation.

Member of well recognized religious sect or organization, organized and existing on May 18, 1917, whose then existing creed or principles forbid its members to participate in war in any form and whose religious convictions are against war or participation therein.

In our eighth month of war, also, we began to participate apparently as an ally instead of merely as an associate. In October there were reports of an invitation to us to join in an Allied War Conference to be held at Paris in the middle of November. Considerable mystery was made about the invitation and its reception, as well as to whether or not it was to be accepted. Then an interesting report came out to the effect that the President had chosen his friend, Colonel E. M. House, to collect information and material for use by the American commissioners at the peace conference. Then, on November 7th, when nothing had been said about Colonel House and his mission for some time, Mr. Lansing announced in Washington that Colonel House, together with a large staff of assistants, had arrived safely in England, on his way to attend that conference at Paris. The Colonel has with him

Admiral Benson, chief for operations; General Bliss, Chief of Staff of the Army; Vance McCormick, chairman of the War Trade Board; Bainbridge Colby, of the Shipping Board; Dr. Alonzo E. Taylor, food and health expert, representing the Food Administration; Oscar Crosby, Assistant Secretary of the Treasury; T. N. Perkins, representing the Priority Board, and several others.

This American participation in their councils was received with every evidence of genuine satisfaction by the official representatives of our Allies. The imperative need of frank counsel and well considered joint action was never more clear. For this eighth month of American participation, which has seen only the almost infinitesimal beginning of real fighting by our men, has seen disastrous defeat of our Italian Allies and the practical elimination of Russia as a factor in arms against Germany. It appears that the greatest hope for any assistance to the Allies which now lies in Russia is that such a measure of civil war will ensure as will prevent any substantial profit to Germany from the cessation of hostilities against her on the long eastern front.

The practical cessation of such hostilities has been turned to huge advantage by Germany in withdrawing forces for use in overwhelming the Italians under General Cadorna on the Isonzo line, where only recently he had won such glorious advances against the Austrians. In the middle of October, despatches from Rome began to indicate an intention on the part of the Germans to undertake a great offensive against Italy. Apparently no attention was paid to these warnings by the Allies, and no assistance was sent to Italy. There were reports in Washington of desperate need of guns and other supplies. But nothing was done to meet the need. Then, toward the end of the month, Berlin began to report the advance, and day by day the direful news came of the resistless forward swing of the German divisions, and the ever-increasing toll of prisoners and captured guns, until the figures ran up to 200,000 men and 1,800 guns. The Italian line had been driven back out of Austrian territory, and from one Italian river to another, each of which was to be positions for the stand that was to check the victorious Germans. Reports as this is written are

that the retreating Italians, now at length, reinforced by French and British troops and artillery are making their stand on the Piave River, and hoping to save Venice from the Huns. But Venice is to be evacuated by soldiery and civilians in the hope that its historic buildings may escape the rage of the savages.

Meantime the United States authorities are slowly seeking out the disloyal, and the enemy aliens resident and active among our people. And a custodian of Alien Property has been appointed under the Enemy Trading Act. Also a censorship of outgoing foreign mails has been established. But German endeavor is not stopped.

[*This record is as of November 14th and is to be continued.*]

THE BATTLE OF SLIM BUTTES.

(From the *Belle Fourche Bee.*)

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ON Saturday, June 23d, Mr. W. M. Camp, editor of the *Railway Review*, of Chicago, who has given his recreation time for many years to a study of the Indian Wars of the West, passed through Belle Fourche, on his way home from Slim Buttes and announced that he and a party of ranchmen of the vicinity had succeeded in locating the place where this battle occurred. Use was made of authentic data and sketches of the ground obtained by him from upwards of twenty surviving officers, enlisted men and Sioux Indian survivors of the battle, and an abundance of debris of Indian property destroyed with the captured village, which was found two weeks ago, is unmistakable evidence that the true location of the battle has at last been discovered. From an interview which we were able to obtain with Mr. Camp, the following facts regarding the battle and the search for the location of the site of it were obtained.

The Battle of Slim Buttes was fought on September 9, 1876. General George Crook, commanding the Department of the Platte, with a force of about 1,500 men, started from Heart River, in what is now North Dakota, where he had been separated from the command of General A. H. Terry, after the disastrous campaign of the Little Big Horn during the summer, and started on a "bee line" for the Black Hills. The immediate necessity was to procure provisions for this large column at the earliest possible date.

On the evening of September 7th, Crook and his soldiers reached the north fork of the Grand River, in a famished condition and went into camp. For eleven days the entire command had been subsisting on quarter rations, supplemented with horse meat, wild plums and bull berries; and, on the date stated, the commissary supplies gave out entirely. From overeating of wild fruit many of the men had contracted dysentery, which aggravated their weakened condition resulting from the shortage of regular food.

But this was not the worst. There had been incessant rain for more than three weeks, and on much of the route from the headwaters of the Tongue River, in Wyoming, where Crook started in July, north nearly to Yellowstone, east to the Little Missouri, and thence on the Heart, the Indians had burned the grass behind them, so that the horses, much of the time, had but little or no grazing, or were subsisting on newly sprouted, instead of cured grass. The consequence was that the horses were fast giving out, and several hundred of them had been shot to prevent them from falling into the hands of the Indians. The official reports show that more than one-third of the cavalry were afoot in the sticky gumbo, either leading their horses or having abandoned them. Even the best of the stock was in no fit condition for offensive campaigning.

Taking account of the footsore and emaciated condition of the men and horses, Crook saw that he would never be able to get the outfit to civilization in the Black Hills, the nearest source of supplies, without resort to unusual measures. Accordingly he selected Captain Anson Mills, of the Third U. S. Cavalry, and gave him instructions to pick 150 men, mount them on the best horses that could be found in any of the cav-

alry regiments present, take fifty pack mules, and hurry forward under utmost exertion to Deadwood, where he was to purchase anything and everything available in the line of provisions, and then take the back trail to meet the main command. Crook himself would stay with the main force and come along as best he could.

Captain Mills left camp on North Grand at 9 P. M., of September 7th, and marched forward all night in rain and inky darkness. He took as guide the famous Frank Grouard, and with him also went several hungry eastern newspaper reporters, whom Crook was glad indeed to part with and who were as eager to reach the flesh pots of the mining camps in the "Hills."

Halting at 5 o'clock the next morning (September 8th), he grazed the stock three hours and then went on. The day was drizzling and foggy, and although they were marching parallel with the high range of the buttes to the westward, they were so hidden in clouds and fog that only the rolling prarie in the immediate vicinity was visible and they were unaware of the proximity of the buttes. Alert for Indians, Grouard kept one ridge ahead of the command, and about 2 P. M. signalled back, with his hat, that he had discovered something. Mills at once halted the command, and riding up to Grouard, they staked their horses behind the ridge, and with their field glasses, made out several Indians packing game and riding across the line of march of the troops, more than a mile distant. The Indians were on the open plain and appeared to be marching westward or toward the northwest; and, of course, it then was known that their village lay in that direction. As further advance of the troops would certainly lead to discovery by the Indians, Mills knew that further investigation before nightfall would be hazardous. Accordingly, he led his men through low ground to the eastward and south and before dark had the whole force concealed in the deep and narrow coulee of a stream, the name or identity of which was unknown to him or any one else with the troops.

During the night Mills and Grouard attempted to learn the location and the size of the village, but the barking of many dogs made it seem imprudent to approach near enough to accomplish their whole purpose. They became aware of the

approximate location of the village and had come upon the Indian pony herd, but felt impelled to withdraw without having seen a tepee. The propriety of attacking the camp was, therefore, veiled in uncertainty, and in the discussion that took place in the council of officers, called by Mills, attention was called to the misfortune that had befallen the valiant Custer only eleven weeks previously, by trying to attack a camp that was much larger than he had anticipated. How, then, might it go with this small force to attack under similar circumstances?

But Mills who had been instructed by Crook to "pitch into" anything in his way that he thought he could handle (and save the captured meat), argued that some chance, at least, must be always taken in successful warfare, and that to go forward would surely result in discovery and pursuit by Indians soon after daylight, where they, with their poor mounts, would easily be overtaken by the Indians and have to fight anyway. In the subsequent language of Grover Cleveland, "They were confronted by a condition rather than by a theory," and seeing that a fight was inevitable, the advantage would seem to be in falling upon the Indians in their sleep.

Mills had his way and promptly organized the troops for attack. Fifty men were to charge the village, fifty more were to gobble up the herd, and the remaining fifty under command of Lieutenant J. W. Bubb, then quartermaster of the party, were to stand by the pack mules.

At length the command, in three parties advanced up the creek, toward the west, to the attack. It was still quite dark, and the utmost caution had to be exercised in order to steal upon the village that was "somewhere" in the vicinity. The "accident" that happened in this case was the stampeding of the Indian herd, through their keen nasal sense of "American horses" before the troops were quite ready to charge. The ponies ran at once to and through the village, waking up all the Indians, so that the surprise planned upon was off. Seeing that delay meant failure, the troops immediately rushed in among the lodges, while the Indians were already fleeing to the low hills surrounding. The tepees were taken, but of Sioux only a few squaws fell into the hands of the captors.

These women, through Grouard as interpreter, informed Mills that a large camp of Sioux were near at hand and would surely come to their relief. Mills, taking them at their word, at once dispatched a courier on the back trail to inform Crook, who was found already on the march and who hurried men forward as fast as they could go.

In the meantime Mills held the village, and dug intrenchments nearby in which to make a stand should he be attacked in large force. Some Indians who had fled from the village took refuge in a brush-covered washout or ravine, so near to the village that they could command it, and they kept up such vigilance as to prevent destruction of the tepees. In the charge on the village, Lieutenant Von Lutwitz had been severely wounded in a leg, and several soldiers had been wounded by the fire of the Indians from the ravine. Other Indians took station on hills out of range and annoyed the troops by shooting an occasional spent ball into the still intact village.

Early in the afternoon Indians began to swarm over the main ridge of Slim Buttes, which now, the clouds and fog having lifted, were visible, a few miles to the west. The time was a critical one for Mills and his hundred and fifty, but, greatly to the relief of their anxiety, a lone cavalryman sent to a craggy butte to the north, signalled that Crook was showing up on the distant ridges to the northeast. He was coming right on Mills trail, as he had promised to do two days before, and so Mills knew that relief was only a question of an hour or two.

Crook arrived on the scene none too soon, for by the middle of the afternoon some 2,000 fighting Sioux were advancing under cover of hills and ravines to advantageous positions in all directions within a half circle swung around from north by way of west to south. These Indians had come through the buttes by way of what is now known as the Reva and Indian passes, the latter being about three miles south of the former, and neither of them farther than four miles from the village.

As the nearest high ground was to the south and southwest, the most troublesome shooting came from these directions, and Crook was not slow in organizing troops to drive them off, which they did, toward evening, by advancing under the Indian fire, with some loss in wounded. Finally, a long skirmish line

was thrown out, extending from north around to south, in conformity with the continuous semi-circular range of buttes, and drove the Indians to a safe distance. From this time on there was no further trouble from long range fire from the Indians.

Let us now go back to the eighteen or twenty Indians, men and women, who had taken refuge in the gully across the creek from the village. General Crook had given attention to these as soon as he arrived, and assured Mills that he would "get them out." General Crook always had a warm feeling in his heart for Indians, and, through his Sioux-talking guides and scouts began calling over to invite the besieged to come out and surrender, under promise that no harm would be done them. This plan resulted in a few women and boys coming out and giving up, but the majority were obstinate and answered back that they feared treachery, and would trust to the tactics of their friend Crazy Horse rather than in the promises of an enemy.

Failing to make an impression on these nervy, but forlorn fighters, Crook finally ordered that they sould be subjected to a concentrated skirmish line fire, into the mouth of the ravine, from cover across the creek. A few rounds from several hundred men, arranged about in a semi-circle, did terrible execution, killing a number of men and women. Only three or four escaped unwounded, and after the firing ceased these came out without further resistance.

The loss to the troops was one scout and one soldier killed and one commissioned officer and six of the enlisted men wounded. While the losses on either side in this battle were not heavy, the event is nevertheless an important one from the historical standpoint. It was the first real defeat of the large horde of hostile and reservation Sioux who that year defied the government because of unfair encroachment of whites in territory set aside for exclusive use of the Indians by treaty. From this time on the Sioux and their Cheyenne allies began to break up into bands that were defeated and driven to surrender at the agencies during the following winter and spring. No other engagement fought during the year 1876, except that of the the Little Big Horn has been written of so extensively

as the battle of Slim Buttes. King, Burk and Finerty, each in his own masterly style, has written an entertaining classic chapter describing this event as he saw it.

Slim Buttes, a long range of clay hills, in Harding County, South Dakota, is still far removed from railroads. The eastern slope is well covered with grass and not a little timber. Much of the territory is now in the forest reserve. Cattle men began to range their stock in these buttes as early as 1886, and the homesteader came about 1905, or later; yet until the past week the site of the battle fought here forty-one years ago was unknown to any of the inhabitants.

Some seven or eight years ago, Mr. Elias Jacobson, topographer of the State Land Survey, from various accounts that he had read, picked upon a spot in Section 27, Township 17 north, Range 8 east, as the probable site of the battle, yet no survivor of the fight had visited the ground. Without investigation the State Historical Society of South Dakota accepted this as the correct location, and published Jacobson's map of the locality, in volume 6, page 495, of Collections and, for a time no one questioned the accuracy of Jacobson's idea of the identity of the site.

The Captain Anson Mills of 1876 is still living, at the age of eighty-two, and is now Major General U. S. Army, retired. About four years ago he heard of the supposed discovery of the site of the battle and became desirous of visiting the place to see if the point selected corresponded with his recollections of the topography. Accordingly, in July, 1914, in company with General Charles Morton, a survivor of the battle; a representative of the State Historical Society, in the person of Mr. Robinson, a son of Doane Robinson, Secretary of the Society; and Mr. Camp, General Mills went to Slim Buttes by automobile from Belle Fourche and visited the ground referred to (Sec. 27–17–8). Much to his disappointment, he found that the site selected was not the one where the battle was fought. Both he and General Morton declared emphatically that the true site had not been identified, and they began to search in other localities, when, through a misunderstanding about the length of time for which the automobile had been hired, the

trip was suddenly abandoned and the party returned to Belle Fourche.

It was then the intention to continue the search the next year, but this was not done. General Charles King, another survivor of the battle, in 1915, hearing, for the first time, that a detailed map showing the supposed location of the site had been published, declared that the Jacobson location was wrong, and suggested that a careful search be made about one and one-half miles to the southeast of said Section 27 which is at Gill postoffice. His idea as to this suggested substitution to the southeast was gained from a study of the hills shown in the Jacobson map.

In 1915 Mr. Camp planned to visit the Buttes with an Indian survivor of the battle, but, by reason of governmental red tape about granting permission to take the Indian off the reservation, had to abandon the trip. In the meantime Mr. Camp continued his study of the location of the battle. In addition to data and sketches furnished by General Mills and Morton (the latter of whom died in 1915), he interviewed General George F. Chase, General John W. Bubb, and General Charles King, besides more Sioux Indians and several enlisted men. *General King made for him a map showing the topography of the site of the village and contiguous territory, in considerable detail.*

With these data and maps Mr. Camp proceeded to the Slim Buttes country, arriving at Gill on June 16th, and spending three days in that vicinity in a careful search of the courses, Rabbit, Beaver and Jones Creeks. The investigation failed to disclose any evidence whatever of fighting ground. General Mills had insisted that the site, wherever found, should yield broken utensils of an Indian village, empty cartridge shells and the entrenchments which he had dug for anticipated defense.

Giving up the idea that the battle could have been fought anywhere on the creeks above named, he explored, in succession, the creeks to the north and finally arrived at Revan Gap, where Mr. W. W. Mitchell told of having found numerous cartridge shells on three buttes. Assuming one of these to have been the butte to the southwest of the village, Mr. Camp started in there and followed a northeast course to the creek bottom.

Coming upon fragments of an iron tea kettle, *he was gratified to discover that all of the surrounding landmarks conformed splendidly to General King's map*, so a minute search in the grass was begun right there.

* * * A search of two and a half hours brought forth unmistakable evidence of a destroyed village, as no less than twenty-one kinds of implements or articles used by these people in their camps were picked up. In most cases the articles were nearly covered with dirt or overgrown with sod.

* * * * * *

At the time of the battle General Mills was unaware of his location until told by the captured squaws that they were on Rabbit Lip (Mastincha Putin) creek, on the east of Slim Buttes. Gap Creek, where the discovery has been made, is one of the three main branches of the "Rabbit Lip" Creek of the Indians, the other two being the streams now known as Antelope and Rabbit Creeks by the settlers. The stream now called Rabbit Creek is the central branch and rises high up in the buttes.

* * * * * *

Part of the relics found have been sent to General Mills, who lives in Washington, D. C. The larger portion, however, have been deposited with Mr. W. W. Mitchell, as custodian, and a museum of the battle has been started within a mile of the place where it was fought. As cartridge shells and debris of the destroyed village lie scattered through the grass or lightly covered by the soil, in plenty, there is every opportunity of adding to the collection of relics already started. None of the ground occupied by the village or fought over by Crook's soldiers on the day in question has yet been plowed, although the larger portion of it is susceptible to cultivation.

It might be stated, in conclusion, that General Crook camped on the battlefield the night after the fight, and the next day preceded on toward the southwest. Mills was again sent on ahead, and, purchasing large quantities of food and a drove of cattle, in Crook City, Deadwood and other mining camps, returned and met the main command on the Belle Fourche River. Eating a square meal the first time in several weeks,

the command was marched to Centennial Park, where the men and horses were recuperated before proceeding to Camp Robinson, later Fort Robinson, on White River, where campaigns subsequently conducted by Crook that year were organized.

THE USE OF CAVALRY IN THE EUROPEAN WAR.*

By Lieutenant Colonel H. PONDRET, Revue Militaire, Suisse.

THOUGH it is difficult to collect detailed and accurate information on cavalry operations in this war, I have undertaken this investigation because I believe the legend of the "cavalry's failure" should not be allowed to persist. A great deal has been heard about this "failure," especially among us, though it is difficult to discover what interest anyone could have in convincing an arm of its lack of value.

In spite of the obscurity of which I have just spoken, enough is, however, known to permit the statement that, wherever it has been well used, the cavalry has done all that could be expected of it and sometimes even more.

* * * * * *

When the war broke out, many questions naturally suggested themselves as to the probable use of the cavalry with their horse artillery, their pioneer telegraphists, their cyclists, their radiotelegraphic stations, their trains of auto trucks, raids especially recommended by General von Bernhardi, who was hypnotized by old memories of the War of Secession! On the other hand, should we be likely to see the cavalry working according to opposite ideas, at a short distance from the infantry, in intimate contact with it, in the combat of the three arms, to use an expression which two years of war have already made obsolete.

*Reprinted from *The International Military Digest*, May, 1917.

And reconnaissance? Would it be done by means of squadrons or, according to the old methods, by patrols? Would it be possible still, as at the beginning of 1870, to push the elements of this arm far forward or would the new progress of armament compel the cavalry to work only at short distances?

And then, there was the great question of the mounted attack, close to the heart of so many cavalrymen.

Finally, it might be asked how the cavalry would behave in the dismounted combat. Its instruction had not been pursued everywhere with much care. Would it be enough for the task?

The answer has come to all these questions. All the eventualities forseen have come to pass, naturally in varying degrees.

With the cavalry of General Sordet in Belgium and the German cavalry on the Russian front, we find raids.

We find the cavalry sometimes preceding the armies by great bounds, sometimes working in direct contact with its infantry, at short distances.

We find it actually used on the battlefield itself, that of the Marne, for example.

Numerous mounted attacks have taken place. The cavalry of General Brussilof has showed us pursuits on a large scale, such as the most ardent cavalrymen did not dream of.

Finally, as was forseen, there has been much fighting on foot.

But let us not anticipate. Let us look into things a little more closely, beginning with the German cavalry on the Western front, about which we have the most information. I shall confine myself to the cavalry corps of the First and Second Armies, because these corps of the marching flanks, had, naturally, the greatest and most interesting activity.

On the morning of August 4, 1914, preceding the right wing of the army of invasion, two divisions of cavalry (2d and 4th) of von Marwitz's corps, crossed the Belgian frontier east of Gemmenich, skirted the Dutch frontier and moved on Vise, north of Liege, intending to cross the Meuse there.

They found the bridge destroyed and the crossing guarded by a battalion of infantry. The latter, favored by the nature

of the terrain, stood off all attacks, in spite of its small number.

Checked here the German cavalry rapidly adopted another plan, recommended by their mobility and their acquaintance with a terrain probably long since known to them. A brigade of Hussars was sent to the ford at Lixhe, below Vise, and succeeded in crossing it. Not only did the Belgium troops guarding the crossing at Vise find their left turned (the effect of which was to make them withdraw to the line of the forts of Liege), but this first crossing of the invaders to the left bank of the river opened the roads to Antwerp and Brussels to exploration. As soon as the Vise bridge was restored and some bridges at Lixhe constructed, an entrance was prepared for the German columns which latter sought to cut off the Belgium army established on the Gette from its base at Antwerp. The task of the first day was thus accomplished and in a relatively short period of time.

During this first day, August 4th, the German cavalry is not very far ahead of the infantry advance guards, this is easily explained by the proximity of the frontier. Besides, the Germans do not seem to have applied any rigid system in this matter of distance. Sometimes the cavalry is kept close, sometimes it is given free rein. On the Western front, its marches were only rarely very long. The necessity of having at hand his powerful auxiliaries the battalions of chasseurs and the horse artillery tend to prevent the commander of cavalry divisions from going too fast. If I emphasize this point, rather interesting in itself, it is because this course was not followed everywhere.

The Second and Fourth Cavalry Divisions were not the only ones to cross the Belgium frontier on the morning of August 4th. Further to the south coming probably from around Malmedy, the Ninth Division, belonging also to von Marwitz's corps, crossed the Salm between Stavelot Viel-Salm, and marched towards Marche, west of the Ourthe; it reached Marche on the 6th. We have less information about its activity and its mission. We may suppose that it had to cover the concentration of the Third and Fourth Armies at Saint Vith and north of that place, then during the attack and investment of Liege, to cover those operations towards the west. It was per-

haps with advance elements of this division that the Belgium lancers were engaged on the 5th at Plaineveau, south of Liege.

On the 14th, the Ninth Division having become superfluous south of the Meuse when the First Cavalry Corps (Guard and Fifth Division) arrived, crossed and joined the Fourth Cavalry Division in the region of Gembloux-Wavre. These two operated together until the 8th.

The Belgium which, on the 6th, was on the concentration quadrilateral Tirlemont-Louvain-Wavre-Perwez, took up positions along the Gette. The left flank rested on the Demer, the right at Jodoigne was somewhat protected by the forts of Namur, but, after all, not very efficaciously. The distance to the Meuse is very great, and the adversary might well be tempted to send troops through the gap. The Germans concentrated an enormous mass in the front of the Belgium army. About August 18th there were about eleven Army Corps here.

The mission of the German cavalry, during this period, is quite evident. It had to mask the movements of the armies and to operate on the enemy's flanks. The first of these tasks was quite easily accomplished, thanks to the overwhelming numerical superiority of the German cavalry. But operations on the enemy's flanks were not so easy. The first attempts were against the Belgium left. They were not always successful at the beginning.

On August 10th, the Second and Fourth Divisions pushed with a part of their forces at least, to the Velpe, between Diest and Tirlemont. This movement does not appear to have succeeded, for on the 11th, we find these divisions at Hasselt. On the 12th there was an undoubted check. Six regiments from the same divisions tried to force a crossing of the Gette at Haelen. They were supported by two battalions of chasseurs and three batteries, that is 4,000 cavalry, 2,000 infantry, and 18 guns. The Belgium cavalry division could oppose them with only 2,400 troopers, 400 cyclists and 12 guns. The Germans began their attacks about 8 o'clock in the morning, the cavalry being dismounted for the most part. For two hours two companies of cyclists stood them off. About 10 o'clock, German artillery fire made the edges of the village of Haelen

untenable, the cyclists then blew up the bridge and retired to the railroad.

At noon the Germans attacked simultaneously Zelk and Haelen stat on. The cyclists fell back towards the main Belgium position at the farm of Yserbeeck. Twice they were charged by the German dragoons, who suffered great losses.

Finally the Yserbeeck farm was taken, and the situation appeared hopeless for the Belgians. At this moment, the Fourth Belgian mixed brigade arrived on the field after a march of twenty-five kilometers. Their appearance turned the scale. From then on the Germans could make no progress, and they fell back to Haelen.

After this check, the role assigned at first to the Fourth Division was no doubt changed, for we find it on the 16th, about Gembloux and Wavre. It is probable that this division and the Ninth were covering the march of the Third, Seventh and Ninth Corps, which had crossed the Meuse between Liege and Huy and were marching towards the interval between Jodoigne and Namur. The German and the French cavalry met near Perwez, and the French seem to have had the worst of the combat.

The German cavalry took an active part in the fight at Tirlemont, on the 18th. This was a critical day for the Belgian army. Pressed in front by overwhelming numbers, and with its flanks turned, it could not hold any longer on the Gette. Its left between Diest and Tirlemont, was approached by three army corps. The Second Cavalry Division flanked the movement by advancing between the Grandes-Nethe and the Demer. Elements of that division were at Aerschot, north of Louvain, on the evening of the 19th.

A little more and the communication with Antwerp, the army's base, would have been cut off. A retirement to the Dyle was first accomplished and when it was found that this was not sufficient to escape envelopment, the retreat on Antwerp was ordered.

To finish with this phase, so far as we can find out, the Ninth Cavalry Division followed the Belgian retreat through Ottignies to Brussels. It went through the latter city without

stopping on the 20th and continued its march towards the west.

The Second Cavalry division seems to have continued its function as flank guard on the extreme right; it covered the right flank of the First Army which was marching on Brussels. This division then went in the direction of Ostend; we find it at Alost on the 21st, exploring towards Ghent, while the Ninth Division was reconnoitering in front of the First Army. We lost track of the Fourth Division; it is probable that it continued to operate with the Ninth Division.

During the operations north of Liege, a large body of cavalry appeared in the Condroz, the region south of Liege. This corps was made up of the Guard Cavalry Division and the Fifth Cavalry Division. It was concentrated at Bithburg, north of Treves, and marched through the Ardennes forest, with the mission of reconnoitering the line of the Meuse about Dinant. It reached La Roche on the outer side of the Ardennes on the 11th of August. The patrols which scoured the country skirmished with more or less success with the advanced elements of the French cavalry corps of Sordet, which had arrived on the Ourthe about the 7th or 8th. Except in one instance the German patrols were not able to reach the Meuse.

In order to find out what was going on along the line Namur-Givet and probably also in order to open the way for the Twelfth Saxon Corps, the commander attempted, on August 15th, a reconnaissance in force of Dinant, from the direction of Ciney. After temporary success, the Germans were repulsed by the troops of the First French Corps which had arrived only a little while before. General von Richthofen did not insist. On the 19th he gave up his place to the Twelfth Saxon Corps, which took up the operation on its own account.

Thus on the two flanks, at Haelen and Dinant, the attempts of the German cavalry fail almost s multaneously, August 12th and 15th. The attack on the Meuse was a serious undertaking. It will always be difficult even for a strong cavalry body to force a crossing so naturally strong and defended by a good sized body of troops of all arms.

The check to von Marwitz's cavalry on the right wing is not so comprehensible. One may wonder whether, if he had been

insistent on cross ng at Haelen he might not have succeeded. Zelk was freely defended and the movement on that point might have been developed more.

Upon leaving the region of Dinant, von Richthofen's corps was ordered to cover the eft flank of the Eleventh Saxon Corps which was marching upon Namur. They marched around this place and reached the vicinity of Charleroi on the 23d as the battle was ending.

While the battle of Charleroi was going there were five divisions of cavalry north of the Sambre-Meuse.

The Second Division on the right bank of the Dender, reconnoitering in the direction of Lille.

The Fourth and Ninth, in the region of Tournai-Conde on the Scheldt.

The Guard and the Fifth, south of the preceding and farther to the rear.

On the 24th, the advanced elements of these divisions are on the line of Pitthen (north of Tournai) Tourcoing-Lannoy, as well as south of Lille and near Douay.

From this moment on, it is rather difficult to describe with exactness the activity of these cavalry masses. We may suppose, however, that the right wing turned to the south, for, on the 25th we find a large part of von Martwiz's corps near Cambrai.

About the same time, von Richthofen's corps crossed the French frontier at Sars-Poteries.

The German is entering on a brilliant period! The enemy beaten at Mons and Charleroi, is retiring to the south. The object is to cling to him and not give him any rest; the marches are lengthened so as to push the rear guards. The cavalry has its own infantry on its heels. The latter is advancing by forced marches, especially on the German right. The result is a great inequality as to distances, and cavalry and infantry are frequently abreast of each other.

Von Marwitz's cavalry, still on the right flank, pushed from Cambrai to Marcoing, which it reached the 26th. From there it reconnoitered towards Combles and Peronne. On the 29th, it was reported at Albert, on the 30th near Roye. If this itinerary is correct, we may deduce from it that the troopers of

von Marwitz covered the front and right flank of the Second Corps, itself the extreme right element of the First Army.

In the night of August 31st—September 1st, the cavalry of the First Army went through the forest of Compiegne in two columns. In the morning, they had a serious engagement with the English rear guards on the south edge of the forest. The division lost half of its artillery, and was roughly handled, so much so that the next day it could not take part in a fight which the Second and Ninth Divisions, coöperating with advanced troops of the Second and Fourth Army Corps, had near Senlis.

It is probable that the circumstances of this check to the Fourth Cavalry Division were as follows: On the evening of the 31st, a body of 4,000 English troops of all arms coming from the direction of Compiegne, arrived at Nery, a little town south of the Oise. Very well received by the inhabitants, the officers dined till a later hour, and seemed to have neglected the measures of security indicated by the circumstances and the dangerous proximity of the forest of Compiegne. Warnings were not lacking, however; civilians reported later in the evening that the forest was full of Germans. At 5:30 in the morning when the batteries were ready to leave, the first shrapnel burst unexpectedly in the village, accompanied by the rifle fire of skirmishers who had approached very close, thanks to the mist and the lack of service of security. The losses were very great. Many artillery team horses were hit. The English Officers, many of whom were hardly equipped, made up for their carelessness by great decision and bravery. After a moment of the extreme confusion, the English got themselves together. In spite of the loss of many of their officers, they counter-attacked vigorously. The Hussars, most of whose horses had been killed, deployed on foot. The German skirmishers were driven back. The English pushed as far as the artillery position, captured eight guns and threw the support back in great disorder. This offensive was so vigorously conducted that the necessary time for a withdrawal was gained. It was only after the departure of the English and the forcing of the Oise more to the west that the Germans were able to occupy Nery.

On September 4th, the Second and Ninth Divisions participated in the change of direction to the Southeast of General von Klucks army and marched to La Ferte-sous-Jouarre on the Marne. The Fourth, still suffering from the effects of the Nery fight, probably was assigned to the flank guard corps, the Fourth Reserve, which stayed north of Meaux.

On September 5th, the Second and Ninth Divisions continued their march to the south, went through Coulommiers and moved towards Provins. Towards noon it was ordered to stop. It is probable that they passed the night in the sector of the Fourth Corps, at Coulommiers, or in the immediate vicinity, for that is where it is known to have been engaged on the morning of the 6th. The battle of the Marne was about to begin.

* * * * * *

Almost on the line with Marwitz's corps and on its left, operated the cavalry of Richthofen. Its mission was to pursue the English retreating from Mons.

This pursuit leads to daily combats with the enemy's rear guards. There is fighting first at Haulchin, at Givry, then at Marbois, which is taken by assault and where 100 prisoners are taken. The chief of staff of the corps is killed in the fight. Meantime, patrols are sent out on a wide front and generally to great distances. Their strength varies a great deal, from a dozen men to a platoon. One of them, sent towards Saint-Quentin, attacked, according to the German account, a platoon of cuirassiers which it put to flight, killing six men and five horses.

On the 28th, another fight at Urvillers and around Saint-Quentin. A French territorial regiment, which had arrived that morning only, was roughly handled there and left many prisoners with the troopers of the Guard. Reinforcements from La Fere and an attack by a squadron of English Hussars, which bowled over a German squadron, did not succeed, however, in turning the issue of the fight.

This corps has now arrived in the region of important water courses, and a squadron is sent to reconnoiter the crossing of the Oise, and the Aisne.

The 29th, Galancourt, south of Ham, was taken and then an attack by the dragoons of the Guard prevented the English from stopping at Guiscard.

On the 30th, Richthofen's corps arrived before Noyon. The patrols had not been able to find out whether the enemy was disposed to defend the city nor whether the Oise bridges were still intact. A part of mounted troops and cyclists were sent to develop the situation. The cyclists were instructed to rush the attack on the river crossings. The city was not defended and strangely enough a bridge was found intact. The corps were then able to cross there and at Ribecourt and to move, the same day, to the region south of La Fere, moving on Soissons. That day, a lieutenant succeeded in seriously damaging the Soissons-Paris railroad.

For September 1st, the cavalry received order to move to the south through Soissons, and reconnoiter towards Chateau-Thierry. The taking of Soissons was not so easy as that of Noyon. All the patrols which advanced towards the city were met by fire and could not progress. One regiment of Uhlans, a battalion of Chasseurs, two batteries, and a detachment of pioneers were sent forward to seize the crossing of the Aisne. The chasseurs and pioneers entered the city first, ran to the bridges and arrived in time to prevent the destruction of the last, still intact. The French defended themselves in the barracks, but under the artillery fire they had to yield finally, and the German squadrons began to go through the city, while a certain number of squadrons, dismounted searched the houses. The pursuit was continued that day as far as Branges, about twelve kilometers from Soissons.

On the 2d, the order arrived from General von Bulow to cross the Marne at Jaulgonne. The advance went forward rapidly, supported by artillery and machine guns, it attacked on foot and succeeded in seizing the bridges before they were cut; then, without stopping, it gained the heights south of the river. Under this protection the main body was able to cross this important obstacle.

On September 4th, the direction of march was Montmirial, but the cavalry corps could not advance on the roads; they were filled with the troops of the Seventh and Ninth Corps.

In the formidable rush of the German armies towards th south, the infantry was keeping up its forced marches without any respite.

The First Army had indeed encountered resistance at Cambrai (the 26th); on the 28th, south of Bapaume (at Perrone, at Bellenglise) and at other places. The French army of General Larenzac tried on the 29th to check the march of the Tenth Corps at Guise and Saint-Quentin. But, on the whole, the advance had been very rapid. The cavalry which opened the way and which had daily combats with the enemies rear guards, was caught up with sometimes, on that account. There is nothing astonishing in that.

It was then across country that the cavalry gained the Petit-Morin between La Ferte-sous-Jouarre and columns of the Second Army and on their right. It moved still further to the right on the 5th, in its march to the Grand-Morin and beyond. That evening the guard was across the road from La Ferte-Gaucher to Provins, the Fifth Cavalry Division to its right. These two divisions covered a front of about five kilometers. They were in this position when the battle began. Before studying the role which they played in the battle of the Marne, in coöperation with von Marwitz's cavalry, let us take a rapid survey of the activities displayed in the pursuit. On the whole, the difficulties were not great. The enemies' orders are almost always not to become seriously involved. If he resists too long, the artillery is called on to force h m to leave. Besides, the cavalry has the comforting thought that the heads of the infantry columns are close behind and ready to support it. These are factors likely to give assurance to a cavalry that moreover, has proved in more difficult circumstances, that it had no lack of it. But, though the task was not difficult, it must be admitted that it seems to have been well executed.

The cavalry of the First and Second Armies opened the way to its infantry, following the adversary closely everywhere. Nowhere was contact lost. The crossing of the Aisne, the Oise, the Petit-Morin and the Grand-Morin were always occupied in time, thanks to the decision of the advance guards and sometimes even to the bold attacks of the few troopers in

that point. Where the bridges were found to be destroyed, the cavalry pioneers replaced them without delay, as at Noyon and at the Grand-Morin.

Reconnoitering, inasmuch as the cavalry can be made responsible for it—we shall see that that was not always the case—seems to have functioned well; in this prolonged pursuit, no surprise of large detachments is reported, and such an event might easily have come about in these circumstances.

The marches were thirty to forty kilometers a day. Can it be asserted that the pursuit was not rapid enough? Daily fights, the anxiety of the cavalry commander to have all his troops well in hand, the numerous crossings of water courses, the numberless reconnaissances, slackened inevitably the forward movement.

In any case, thanks to the methods used, the German cavalry finds itself in the best possible condition to take part in the battle which is about to be fought. The horses are tired but not exhausted, the morale of the troopers is very high, the pursuit has intoxicated them, and, then are they not abreast of Paris? (Saddle sores seem, however, to have been quite numerous, which condition is not astonishing, considering the lack of rest. The big horses of the cuirassiers suffered more than the Hussars' horses—this only confirms what is known of the greater endurance of small horses).

The losses were not very great. The Germans attribute this fact to the extremely poor shooting of their adversaries; ill directed volleys did not make any great gaps in the ranks of the German cavalry. It must be said, in this regard, that the German commanders seem to have been fairly saving of their men, during this period, at least. As we have seen, when the enemy's resistance became too great, when it could be forseen that the assault of a town or the attack of a position would be too costly, the artillery was brought up to clear out the place.

In fights for the possession of town, we generally see the battalions of chasseurs engaged in front, squadrons on foot on the flanks, then mounted elements trying to envelop the enemy and even to gain the opposite end of the town by wide turning movements, thus cutting off the adversary's retreat. This maneuver, constantly repeated, resulted in a great number of

prisoners for the German cavalry. With the advance guards, machine gunners and cyclists usually marched. Cyclists were frequently assigned to patrols.

The Belgian and French reports often speak of German infantry being transported in auto trucks so as to be able to accompany the cavalry. The German accounts made no mention of this, and it is probable that the battalions of chasseurs and carbineers kept up by marching on foot. This performance is the most remarkable because they were hardly sparingly used in the fights. They are found taking part in all engagements. As we shall see later, their losses were exceedingly large in the critical days of the battle of the Marne.

Military Notes

WHY IS IT? AN ANSWER.

IN the JOURNAL for October, pages 259 *et seq.*, appears a query under the above caption. The remarks therein touch on vital points and will appeal strongly to officers seeking betterment of service conditions. The existence of the set forth conditions suggests its corollary—the necessity for correction.

The query sets forth the general absence of the spirit of leadership and initiative in our younger officers and asks the reason. No doubt the writer had in his own mind the cause of the condition and brought up the subject in order that some friendly discussion, serious thought, and corrective measures may be had thereon.

It would seem that the query is most timely. We are now at war. There is no time at which initiative and the spirit of leadership is more necessary than now. If such be lacking or dormant, the sooner it is created or aroused from its slumbers, the sooner will we be prepared for the task ahead of us.

Many years ago a Russian, General De Wodye, wrote a most excellent treatise entitled "The Causes of Success and Reverse in the Franco-Prussian War." The merits of the book are such that even the Germans adopted it for study in their own War College instead of their own garbled and contorted general staff account of the same war. The book clearly brings out that the chief cause of the reverses was the centralization of power in the higher commanders and the resultant inevitable absence of initiative and spirit of leadership in the lower ones. It accounted for the defeats of Weissembourg and Wörth, the

lost battles around Metz and the latter's fall, and so on. These defects the French have ful y realized and eliminated, as their operations in the last three years have demonstrated.

The matter may also be illustrated n another way, taking the usual form of the field order as an example: Paragraph 1 gives the information of our own and the hostile forces; paragraph 2, the commander's intentions or object sought; paragraph 3, the detailed instructions to commanders and units in order to carry out the intent of paragraph 2. In general matters of our service, paragraph 3 is the only one given out. Our every act is prescribed with the greatest particularity of detail and is given such prominence that the object in view is frequently not even guessed.

This prescription of subordinate action begins at the very top, from Acts of Congress which prescribe numerous details, that are matters of duty and prerogative of the Chief Executive, and passes clear down the line, becoming more detailed n its nature as the system descends.

There is a realization in high places that the system needs correction. G. O. 17, W. D. 1913, prescribing the bases of training, gives commanders latitude therein and seeks to develop initiative. But, in practice, this has not worked out, possibly and probably because centralization has been deep rooted too long and time is an essential element in changing old ways to new ones.

Lack of knowledge, too, is frequently a contributory cause. Fighting to overcome the enemy is the *raison d'etre* of an army and, yet, in our three-year garrison school course the subject of tactics occupies, excluding Saturdays, Sundays, holidays, and one day devoted to examination, only thirty-seven instructional hours. That is a fair expression of the ratio between time devoted to tactical work and that given to all other forms of service instruction. It is almost useless to give our young men latitude unless they have the necessary basic knowledge with which to take advantage of it.

A realization as to what constitutes the essentials on the part of those charged with instruction and training is also sometimes observed. Instances can be c ted where commanders have forbidden their subordinates from conducting tactical

exercises, merely because such particular exercises were not specifically described in detail in the drill book.

In summation it may be said that the principal causes of any observed lack of initiative and spirit of leadership in juniors are—

1. A long existent deep rooted strangle hold grip of beaureaucratic administration. Papers must be kept straight whether the battle be won or lost.

2. Centralization of control, command and instruction.

3. Insufficient basic instruction.

4. A failure on the part of a majority of those charged particularly with instruction to realize and visualize the necessities and to take advantage of such latitude as is given them to decentralize and to force subordinates to assume responsibility and the initiative.

This presents another question: Will a David arise to slay this Goliah? Who will cut the Gordian knot?

H. R. H.

REMOUNT TROOPS.

ON JANUARY 8, 1917, this troop received seventy-eight remounts for the purpose of completing their training. They had been in the different troops of the regiment for periods varying from about two to three and one-half months and an earnest effort has been made to give them systematic training by having them all assembled during their work hours for supervision by a selected officer. But work on all had not progressed uniformly due to the inability of the officer to designate a suitable trainer for each horse, to control absolutely the attendance and due also to the unequal interest to the troop commanders and also to other circumstances over which no one had control such as sickness, guard duty, and detached service.

On January 19, 1917, some transfers of men were made into and out of the troop in order to get men to replace recruits and

those found to be physically or tempermentally unsuited to the handling of young horses.

The portions of the Cavalry Drill Regulations beginning with Par. 928 and dealing with the subject of "training remounts" was taken as the guide upon which to regulate the training.

All horses were put through the first period, or preliminary exercises not mounted and required to perform in a satisfactory manner before going to more difficult exercise.

The work was carried on very slowly for several reasons:

1. The first basic principal of horse training is acquiring the confidence of the horse and the first effort was made to establish this beyond question.

2. It was desired to establish firmly in the horse's mind the first lessons so as to obviate a later return to them.

3. A very great reason was, that work of this character was new to all but a few men of the troop and it was desired to give them a thorough grounding in the principles and methods involved and to consume enough time in doing it for the lessons to become fixed.

In a short time it became possible to divide the horses into two classes according to their condition and the state of progress of their training. Then by March 1, 1917, the class "A" horses were prepared to take the Third Period while the class "B" were still in the Second Period.

It had been planned to have the class "A" horses ready for issue June 1, 1917, and the class "B" July 1, 1917, but the receipt by the regiment of many other remounts caused a premature issue on April 5, 1917, of forty-seven of the original lot. But as they were calm horses and well along in their training they will probably go into the ranks of their new troop and remain unnoticed except for small slight additional care to be given in the use of arms, jumping and conditioning.

Training follows and is dependent upon conditioning. Vices such as pulling, rearing, refusing at jumps, can be developed very easily by making demands upon the young horse beyond his physical capabilities and continuous overwork during his training period may shorten his period of usefulness even to the point of years. When he is sent to the ranks of the

troop he should arrive sound, spirited, tractable, without blemish and without defect.

Any logical system of training must give prime consideration to the above, so when horses are prepared for shipment at the Remount Depot, only those should be selected that are capable of being brought into reasonable condition in six months. The regiment in peace times had less than a thousand horses and with the ten percent. wastage allowed by War Department orders can expect not more than fifty horses semi-annua'ly. Ordinarily the remount troop can handle more, say seventy-five, but occasionally horses wil be found that will not become fit for issue in six months, others will develop vices after issue and need retraining; and the troop could sometimes do special work such as training polo ponies, horses for local shows, etc.

Remounts should be received semi-annually so that they can be divided into classes which will permit closer supervision on the part of the officers and highly trained non-comm'ssioned officers and a methodical progression based upon a schedule for groups rather than what is more likely to be the haphazard and uncertain training of the individual. It is reasonable to believe that at the end of six months the entire lot barring those delayed by accident, sickness or other incapacity, could be issued to troops to make room for new lots of fifty just arriving.

Great latitude should be allowed the captain in his selection of men from the other troops of the regiment, even from the recruit troop. Our first thought is that the man of the remount troop should have a strong seat and while it is of course desirable he should not be merely a man of strong seat and nothing else. There are other qualifications as essential. His seat must be strong enough to permit him to transmit his wishes through the aids in a clear and unmistakable manner and his seat must be firm enough not to cause him to hurt his horses mouth but he need not be a "bronco buster." He must have good habits so as to be present and in shape to work his horses daily. He must follow to the detail the methods of the Drill Regulations in handling his horse. He must possess unlimited patience and sympathy with his charge and be content with a trifle of progress each day. There are many times when he is away

from the glance of his officer or non-commissioned officer and he must be worthy of the trust they repose in him.

The Cavalry Drill Regulations cover the matter of training remounts and there should be no departure therefrom. The system has proved itself. When troop commanders receive young horses from the remount troop they should know exactly what to expect in the way of training and conditioning, powers and capabilities. On the other hand it is the duty of the remount troop to supply the others with trained, conditioned, and capable horses so that the education of the unit for war can be carried out unhampered or unchecked by weak, unruly or untrained mounts. Surely this means a much higher state of efficiency for these troops and for the regiment.

C. LININGER,
Major Field Artillery, N. A.

MORE TEUTON CAVALRY.

FRENCH FRONT, December 14.—Trench warfare has not diminished the German cavalry forces, as had been generally supposed, for information which has just reached the correspondent of the Associated Press shows the total of squadrons in the service to be even higher than it was at the mobilization of 1914. Changes, however, have been introduced in the mounted arm of the service by which some of the squadrons temporarily have been dismounted and utilized as infantry, while the formations have undergone considerable variation.

At present the German army has at its disposal no fewer than 649 squadrons of cavalry, comprising active, reserve, mobile ersatz, landwehr and landstrum units, but of these 144 have been separated from their horses and used as infantry. This figure compares with 440 squadrons on a peace footing.

When war began the German cavalry was at once formed into eleven divisions, each composed of six regiments of four

squadrons. Besides those, there were also the bodies of divisional cavalry attached to the active and reserve divisions of infantry. Roumania's entry into the war made more cavalry formations necessary and the number of organized divisions was at once increased to fourteen.

The spring of 1917 saw the end of the Roumanian campaign, and with this came a decrease of the divisional formations to six while the divisions themselves were reduced from six regiments to four each. At the same time independent brigades of mounted troops were formed, of which the existence of at least five is known, each having three regiments of four squadrons each.

Nearly every infantry division is also provided with a unit of cavalry whose strength varies according to the nature of the country in which the troops are operating.

From among the cavalrymen who, temporarily, are not employed on mounted duty at the front, twenty-three regiments of riflemen have been formed, which take their turn in holding trenches with the ordinary infantry formations. Each of these regiments is composed of four squadrons and a squadron of machine gunners.

Besides these other units of cavalrymen selected from the regiments of the active army are from time to time used as infantry, but their exact numbers are not ascertainable.

REGIMENTAL RECRUIT AND REMOUNT TROOPS.

EXPERIENCE in having Regimental Recruit and Remount Troops has by its results confirmed the wisdom of the policy. The results are so self-evident that argument seems hardly necessary. The twelve to fourteen weeks of intensive training for the recruits and twice that time for the remounts eventuates a turning into ranks fairly capable troopers to ride fairly well trained horses. That means that man and horse are so qualified for the work before them that there is no fussing

and jigging on the part of the horse and no nervousness and foolishness on the part of the man. The horse's service-life is materially lengthened and the trooper has received such training that he is not only satisfied with his performances but is content with his surroundings. Here is where the great economical value of the system accrues to the government: Fewer desertions, longer animal service, and in general a more efficient cavalry unit (man and horse).

The whole system is founded on:

(*a*) The selection of high grade officers to command the troops;

(*b*) The putting of new men on well trained horses; and,

(*c*) The putting of well trained men on new horses.

One of the most important features of the work is the special and valuable instruction given to those who participate in the training. In these schools (Recruit and Remount Troops) first class instructors are developed for use in the other troops of the regiment. The two troops should work in close coöperation In the Thirteenth Cavalry the commanding officer of the Remount Troop preferred troopers hardly graduated from the Recruit Troop to others for use in his training troop.

Special attention is invited to the methodical, reasonable and effective methods followed in this regiment by Captains Lininger and Merchant as shown in their reports attached hereto.

Without some such system it is not credible that we would ever have properly trained troopers or horses. Our past experience confirms this. Few officers are well qualified for training or developing men and horses and the proportion of non-commissioned officers is still smaller. To turn men and horses into their troops for their training is a sure guarantee that their future development will be wanting in consistency and thoroughness.

In the system under consideration the training is uniform and thorough. To utilize one-sixth of a command to provide the other five-sixths with properly trained men and horses is not paying a high price.

HENRY T. ALLEN,
Major General N. A.

Editor's Table

THE CAVALRY.

[*Communicated.*]

While it would be an ungracious act to point out to the War Department at this critical stage in our military affairs, its undoubted mistake in rushing to conclusions as to the uselessness of cavalry divisions in Europe; and of converting a number of cavalry regiments into field artillery in the first hysteria of preparation, it is now very gratifying to those military experts of all arms who have been broad enough in their observations to see *beyond* the present trench-warfare, that our military policy with respect to the cavalry is about to undergo a change.

The Pershing Expedition into Mexico proved the cavalry arm to be the only arm which could successfully operate south of the Rio Grande, *aggressively*. Without reflection adversely on our brothers of the infantry and field artillery, they were simply armed guards of camps and communications in Mexico; the engineers proved good road builders only; and the aviation corps failed to render only notable service. It was the cavalry alone which secured results; and had armed resistance to our forces continued, the brilliant handling of our cavalry would undoubtedly have been still more in evidence. Comparisons are odious, but so much has of ate been said as to the archaic uselessness of cavalry in the light of aeroplanes, motor-trucks, and other present day mechanical devices for increasing mobility and celerity of action by troops not classified as "horse

soldiers," that the lessons of northern Mexico should not be overlooked.

It is a far cry however, from Mexico to Europe and the voices of those who discountenanced the conversion and emasculation of our cavalry, were as "those crying in the wilderness." The fact that vast numbers of cavalry were being held in rear of the lines of both great opposing forces on the Western Front, was either unknown or disregarded; the tactical lessons of Galicia, of Mesopotamia, and of Northern Italy has not yet been written. Cavalry officers were expected to apologize for wearing the insignia of such an obsolete arm; and many brilliant officers of wide experience and mature judgment, in the handling of cavalry were forced to witness the appointment to general rank, of juniors belonging to a more popular arm.

It is therefore, gratifying to see, that on the recommendation of the general who so brilliantly handled cavalry in Mexico, and who, like Field Marshal Sir Douglas Haig, still believes in its efficacy in Europe, our war Department will organize cavalry divisions, and will possibly utilize for this purpose, the half-baked field artillery regiments of cavalry origin.

No time should be lost; good cavalry cannot be improvised at short notice, even if adequate equipment be ready; and it has been one of the unfortunate lessons of the war, that the improvisation of equipment at short notice, is quite as great a problem as that of making trained soldiers.

All honor then, to our cavalry, which either in Mexico or in Europe, will ever prove itself worthy of the best traditions of its splendid past!

A NEW PROJECT BY THE GENERAL STAFF

The present war has demonstrated that training must be thorough if success is to be expected. Heretofore great emphasis has been laid on the tactical training of organizations. Now each soldier must be a specialist and at the same time he must have a general knowledge of the duties of other specialists in his company, troop or battery.

The expansion of the army has introduced a large number of leaders who need to know something about the duties of the other specialists. As in general they are working to the limit of endurance and as time is a vital factor, it is necessary to devise some method to give them an idea of what is being accomplished in the other branches of the service.

The majority of these Reserve Officers, now assembled in large camps are often called upon to instruct on subjects new to them. They study the regulations, but often differ among themselves in their interpretations of them. It is therefore necessary that a method be devised by which instruction can be standardized.

The Training Committee of the Army War College has decided to use motion pictures as an aid in, and to standardize the instructions of the army. The Commanding General of each cantonment has been supplied with one reel on each of the following subjects:

1. Courtesy and Discipline.
2. Bombing.
3. How to Shoot.
4. Physical Drill.
5. Manual of Arms.
6. Bayonet Fighting.
7. Pistol Shooting.
8. School of Squad.
9. School of the Company.
10. Gas and Gas Masks.
11. Arm Signals for Infantry.

These pictures were taken at West Point. Reports from the various cantonments upon their instructive value verify the judgment of the Training Committee, Army War College. Most of the Division Commanders already realize the assistance of this method and are fully availing themselves of every opportunity to use these pictures.

The experimental stage having been successfully past, other reels are soon to be prepared at the Infantry and Artillery Schools at Fort Sill. These picutres will be included in the schedules of instructions. It is sincerely hoped that they will standardize the instructions at the various cantonments with that of the Service Schools. One Staff Officer at each camp is usually detailed to conduct all exhibitions of these pictures.

He becomes so thoroughly familiar with them that he can call attention to the *meat and pith* of each picture. In order to maintain interest, it has been found from experience desirable to show three reels during a performance; two on military subjects and one not essentially military but purely educational or classified as comedy or tragedy.

The tentative program outlining the subjects to be covered and where the pictures are to be taken is as follows:

TENTATIVE PROGRAM.

Reels to be prepared.

At Fort Sill:

U. S. Rifle, Cal. 30, Model 1903.
U. S. Rifle, Cal. 30, Model 1917.
Stokes Trench Mortar.
The 37 mm. Gun.
Chauchat Automatic Rifle.
Browning Automatic Rifle.
Lewis Machine Gun.
Vickers Machine Gun.
Browning Machine Gun.
Rifle Grenades.
Target Designation (Infantry).
Trenches—Revetments—Obstacles.
Demolitions.
Telephones.
Nomenclature and Care of Pistol.
Nomenclature and Care of Revolver.
Infantry Equipment.
Gas.
Aeroplanes.
Gun Drill (Artillery).
Fire Control Artillery.
Bayonet, Advance Reel.

At Fort Oglethorpe:

First Aid.

At Fort Riley:

Sanitation.
Horseshoeing.
The Mounted Soldier.
Equipment (Cavalry).
Care of Saddlery.

At Fort Leavenworth:

Map Reading.
Map Making.
Battle Maps.
Orders.
Patrolling.

HEADQUARTERS EIGHTY-NINTH DIVISION NATIONAL ARMY.

CAMP FUNSTON, KANSAS,
30th October, 1917.

The Editor:

DEAR SIR: The Military Service Institution of the United States grew out of a meeting held in June, 1878, by General Stanley, Genera Fry, General Rodenbough and Colonel Lieber, requesting the presence of officers of the army at a meeting to be held in the Army Building to consider the practicability of forming an association of officers similar to the United Service Institution of Great Britain. The plan contemplated professional improvement and a discussion of professional topics, with the resulting interchange of views. Its ultimate object was to promote the efficiency of our officers, and consequently, of our army.

At the first meeting some forty officers answered the call; committees were appointed and a report was drawn up and the Institution established with General Hancock as President, and under his direction it grew rapidly. For twenty years the Institution had but three Presidents. Its growth was steady and its field of activity very considerable and its influence beneficial.

In 1880 the *Journal* of the Institution made its appearance. It contained articles by General Schofield, General Fry, Genera Crittenden, General Merritt and Colonel Lieber.

In June, 1885, the Institution was formally incorporated under the laws of the United States. Among the charter members were General Hancock, General Fry, General Crittenden, General Merritt, General Rodenbough, General Abbott, General Glosson, General Gardner, General Gillespie, General Michie, General Webb and General Whipple. In the articles of incorporation it was stated that:

"The particular business and objects of said society shall be of a literary, historical and scientific character, and contem-

plate professional unity and improvement by correspondence, discussion and the reading and publication of essays, the establishment of a military library and museum and generally the promotion of the military interests of the United States."

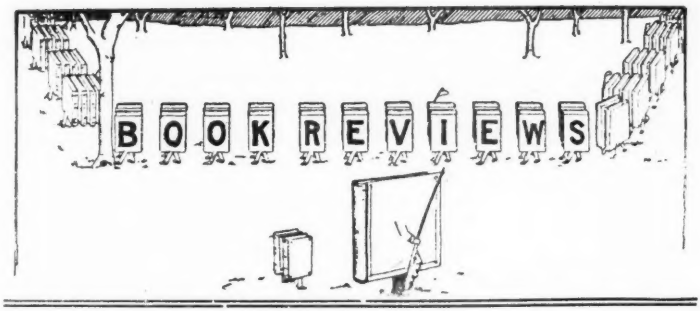
The Institution has done much to stimulate interest in a study of military questions and has striven hard to support the best interests of the service. Unfortunately of late, however, interest in its continuance and upbuilding seems to have waned and just at present the Institution, established as it was by some of our ablest soldiers, is in a condition as to render it necessarry to discontinue its publication and practically close up the activities of the Institution. It seems a great pity that there should not be sufficient service interest to keep the Institution alive, continue its publication and amplify its activities. It is almost the only service publication that is not devoted to one particular arm of the service. It is satisfactorily located and could, with very little effort, be continued. Its continuance would meet the best interests of the service and would result in carrying to an accomplishment the purpose of its distinguished founders. The time has come when it must receive a larger measure of support from the army or terminate its active career.

I shall very much appreciate your publishing this letter with a view of inviting attention of the service to existing conditions. I feel that there is a deep interest throughout the army in the continuance of the Institution. It can only continue, however, through an increase in the endowment, resulting in a sufficient income to maintain the publication, or through an increase in the subscriptions. Assistance in both directions is desired and the attention of the service is invited to the desirability of giving appropriate support to the movement to rehabilitate and continue this most worthy enterprise.

Communications should be addressed to Brigadier James N. Allison, Governors Island, N. Y.

Yours truly,

LEONARD WOOD,
Major General, U. S. Army,
President.



Life of Gen Chaffe

We can do no better, in describing this most interesting book, than to quote from the author's foreword:*

'We pride ourselves in America upon the fact that the door of opportunity is never closed to genuine merit. Yet it has remained for the present generation to witness the solitary instance in which a soldier risen from the ranks of the Regular Army has been honored with the highest military office in the gift of the nation. Not for this exceptional fact, but because of his long and remarkable career in arms, the life-work of Lieutenant General Adna Romanza Chaffee deserves to be made of record that future generations of Americans may comprehend what men of his time endured for the nation's sake. His rise from the lowest to the highest rank in the American Army was due to no extraneous influence, but came as a just reward for meritorious achievements in competition with an exceptional body of men.

* * * * * *

"In the preparation of the life-story of General Chaffee it has been the constant endeavor to present an honest and

*"THE LIFE OF LIEUTENANT GENERAL CHAFFEE." By Major General William Harding Carter, United States Army. The University of Chicago Press, Chicago. 260 pages, 16 half-tone inserts. Price, $2.50, postage extra.

unpretentious representation of his service, as substantiated by the records, and to avoid entirely the tempting realms of speculation. With the lapse of years dangers are forgotten and the memory of hardships is mellowed; yet when the country was supposed to be in a state of profound peace the little frontier garrisons, which made the settlement of half a continent possible, unostentatiously went about their work of carving the path of an empire without expectation of other reward than a consciousness of duty nobly done. During the quarter-century of Indian wars following the close of the Civil War no officer was more uniformly successful than General Chaffee. His subsequent military career in Cuba, China, and the Philippines served to fill some of the most interesting pages of his country's history. His civil career subsequent to retirement rounded out the closing years of a well-spent life."

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Veterinary Pharmacology and Therapeutics.*

I am sure this work will be welcomed in the profession, particularly its chapters on Pharmacy, Pharmaceutuic Methods, Dispensing, Pharmacy Proper, Prescription Writing and Introduction to Pharmacology.

The profession has been rather lax in compounding its own preparations and especially in dispensing There is nothing that appeals more to a client than the receiving of a neatly put up package; the extra trouble brings worth and value to the article.

Most of the prescriptions are well calculated, show thought and are valuable for use. The other subjects are not treated with any additional knowledge to that which has already appeared in similar works, and perhaps some of the drugs are not sufficiently elaborated.

DANIEL LEMAY,
Major Veterinary Corps, Retired.

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*"PRACTICAL VETERINARY PHARMACOLOGY AND THERAPEUTICS." By Howard Jay Milks, D. V. M., Professor of Therapeutics, etc., New York State Veterinary College at Cornell University, Ithaca, N. Y. The Macmillan Company, 1917. Price, $4.25.

Data Book * This little book fills a long-felt want with the Field Artillery Officer, Chief of Section, and Battery or Headquarters Special Detail men. It contains slips for recording firing data in the most approved way, panoramic sketch slips with lines and headings, according to the latest School of Fire methods, also regulation field message blanks with carbon duplicates and graduated scales for sketching. There is provided a number of blank sheets for such notes as one desires to make from time to time, and in addition to this there are several sheets of formulae, telephone tests and signal codes which are valuable for reference. The book contains a Battery Commander's Ruler on the outside of the water-proof cover with string attached, which is handy in making the panoramic sketch, when graduated glasses are not available. The beauty of the book is that it never wears out, as it may be refilled from extra pads carried in the bedding roll.

It should be very popular in the service.

French Terms.† This small pocket manual has been carefully prepared and fills the need of our American Field Artillerymen, for a book covering essential Field Artillery words and terms. Many such books have been written for the service at large but none have contained this most essential data for the Artilleryman whose close association with the Field Artillerymen of France will be most intimate in the use of the French Seventy Fives and Conduct of Fire.

*"FIELD ARTILLERY DATA BOOK AND FIELD MESSAGE PAD." Compiled by Major W. F. Sharp, Field Artillery, United States Army. The R. E. Davis Printing Company, Leavenworth, Kansas. Agents Book Department Army Service Schools, Fort Leavenworth, Kansas. Price $1.00; extra pads 75 cents.

†"SEVEN HUNDRED FRENCH TERMS FOR FIELD ARTILLERYMEN." By Edward Bliss Reed, formerly Regimental Sergeant Major Tenth Field Artillery, N. G. Conn. Instructor in the Reserve Officer's Training Corps, Yale University. With a foreword by Lieutenant Colonel Robert M. Danford, Three Hundred and Second Field Artillery. Yale University Press, New Haven, Conn. Price, $0.50.

The book has the additional advantage of having been proof-read by Major Durette and Captain Dupont of the French Field Artillery, at present on duty in this country. The book should be in the possession of every field artilleryman in the service.

Topography and Strategy.*

This book is an analysis of the topography of each of the most important theaters of war and points out how military operations have been influenced by the topography of the country, with the final conclusion that with all of the modern implements of war, the aeroplane, long range cannon, etc., the lay of the land still plays an important role, as in the past, of determining the final outcome, other things being equal.

The author exhibits a keen interest in things military and his work should prove of very material interest to the military student, as well as the general public. It is profusely illustrated with some special twenty maps and numerous photographs, and covers the World Conflict in a topographical and general historical way up to the entrance of the United States in the war.

War of Positions.†

This is a most excellent volume by a French Officer of experience written more especially for military men, but of much interest to the layman, dealing with the tactics of trench warfare and covering the subject very thoroughly with the roles of the different arms of the service in the attack and defense of a

*"TOPOGRAPHY AND STRATEGY IN WAR." By Douglas W. Johnson, Associate Professor of Physiography, Columbia University. Henry Hett and Company, New York. Price, $1.75, net.

†"THE WAR OF POSITIONS." By Lieutenant Colonel Paul Azan, Litt. D., French Army. Chief of the French Military Mission at Harvard University. With a Preface by Major General J. E. Kuhn, U. S. A. Harvard University Press. Price, $1.25, net.

position. It should prove of especial interest to those officers who have not yet had the privilege of observing the tactics of the French Army in trench warfare, at first hand.

Nursing in War.*

This small book contains the principle facts of surgical nursing as practiced in the Great War. The information has been gathered from various periodicals, books and letters from the front. The text is well written and is illustrated with thirty-seven drawings. It is a valuable book, not on y for those nurses who contemplate service in war, but for all nurses. The chapter on "Bacterial Invasion and Immunity" is very clearly stated.

Handbook of Antiseptics.†

The authors have produced a pocket lexicon containing all of the essentials necessary for an understanding of the chief chemical antiseptics used for surgical purposes during the present war. It is divided into e ght chapters as follows: General Introduction, Chlorine Group, Phenolic Group, Salts of the Heavy Metals, Dyes, Miscellaneous Anticeptics, Methods of Testing Antiseptics, Certain Special Applications. The eighth chapter contains a section on "The Disinfection of Carriers."

*"SURGICAL NURSING IN WAR." By Elizabeth R. Bundy, M. D. P. Blakiston's Son & Company. 1917.

†"HANDBOOK OF ANTISEPTICS." By Henry Drysdale Dakin, D. Sc., F. R. C., F. R. S., and Edward Kellogg Dunham, M. D., Emeritus Professor of Pathology University & Bellevue Hospital Medical College, Major M. R. C., U. S. Army. The Macmillan Company. Price, $1.25.

Trench Warfare.* This little book vividly describes the spirit of infantry and should be read by all officers who have been recently commissioned or who have been transferred to the infantry. Its technical character is varied by interesting psychological experiences and conclusions of the author. The psychology of discipline, a thing the new American officer is apt not to understand, or to give the proper value, is understandingly discussed. It is a message from one democratic soldier to many now in the making.

Tanks, Gas, Etc.† An indexed manual of interest and value by an officer who has evidently seen much of the war.

The subjects are thoroughly covered and many cuts and illustrations make them quite clear. Enemy's methods and material are explained and illustrated. Chapters on trenches and explosives are also added.

It is the most recent, exact and informing manual on the subject to come from "over there."

*"THE ATTACK IN TRECH WARFARE." By Captain Andre Lafargue, One Hundred and Fifty-third Infantry, French Army. Translated into English. D. Van Nostrand & Co. New York. Price fifty cents.

†"TANKS, GAS, BOMBING, LIQUID FIRE." By Captain S. A. Dion, Canadian Expeditionary Forces. George U. Harvey, 102–109 Lafayette Street, New York. Price, $1.25.

BOOK NOTICES.

"THE FLYERS' GUIDE." By Captain N. J. Gill. An up-to-date, practical and theoretical points of flying are thoroughly and interestingly covered. It contains much valuable advice and many helpful suggestions for the novice, as wel as the flyer more advanced in the art. E. P. Dutton & Co., New York. Price, $2.00.

"FIELD TELEPHONES AND TELEGRAPHS FOR ARMY USE." By Captain E. J. Stevens, R. A. It is an exceptionally clear and concise treatise on the telephone and buzzer as used in field work. It is recommended as a valuable publication.

"A SHORT ACCOUNT OF EXPLOSIVES." By Arthur Marshall Chemical Inspector Indian Ordnance Department. This is a treatise on the various powders, fuses, grenades and high explosives with an explanation of their manufacture, use, care and storage. It is a valuable book of reference for the student of explosives and also for the officer who may be called upon to care for and store large amounts of explosives in the field. It deals with American as well as British powders, fuses, etc. P. Blankiston, Son & Co., Philadelphia, Pa.

"GRENADE FIGHTING. The Training and Tactics of Grenadiers." By Lieutenant C. Dyson, Brigade Grenadier Officer, B. E. F. This is a small book of fifty-one pages—4½ x 6 in. It presents a concise and practical course in the training and tactics of grenadiers. All types of explosives are described; detonators and fuses are explained. Other subjects covered are the manufacture of improvised bombs; the mechanism of ser-

vice grenades; the duties of "Throwers" and of observers; barricade making, etc.

Grenade Fighting will prove to be a valuable book on this comparatively recent method of conducting warfare.

As the war progresses methods may change but many of the essentials covered in this book will remain. George H. Doran Company, New York. Price fifty cents net.

"WHAT EVERY SOLDIER SHOULD KNOW." By Captain T. J. J. Christian, U. S. Cavalry. This book is a comprehensive compilation of essential military information for the United States soldier. It contains the following: Military record, mail for forces abroad, the soldier's guide to French, clothing, equipment, care of the rifle, rank and precedence of officers, field intrenchments, sketching, etc., etc. Franklin Hudson Publishing Co., Kansas City, Mo. Price, $1 00.

"BUGLE SIGNALS, CALLS AND MARCHES. For the Army, Navy, Marine Corps, Revnue Cutter Service and National Guard." By Lieutenant Daniel J. Canty, Ninth Massachusetts Infantry, N. G., and Instructor of Buglers for Service Schools. Oliver Ditson Company. This is a compilation of which the title gives an idea of its contents. It is a paper bound book—4½ x 6 in. Price fifty cents.

"FIELD BOOK FOR MACHINE GUNNERS." By Captain Cole. It covers a live subject in a direct and concise manner. We have not had enough written on machine gunnery in our country and this book will do much to fulfill a need for our army. Franklin Hudson, Kansas City, Mo. Price $1.00.